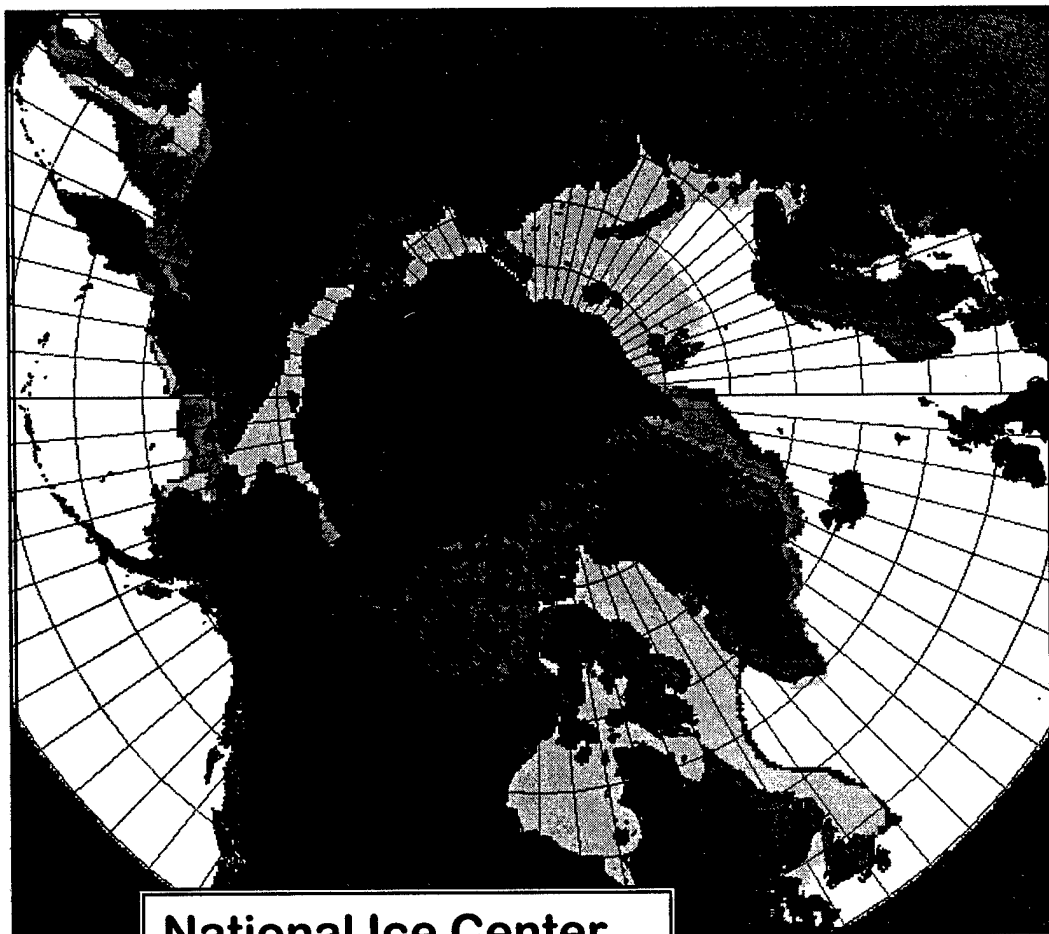


National Ice Center Special Arctic Sea Ice Supplement 1996



National Ice Center
4251 Suitland Road
FB4, Room 2301
Washington D.C.
20395

<http://www.natice.noaa.gov>

DTIC QUALITY INSPECTED 4

19990722 016

DISTRIBUTION STATEMENT A
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PREFACE

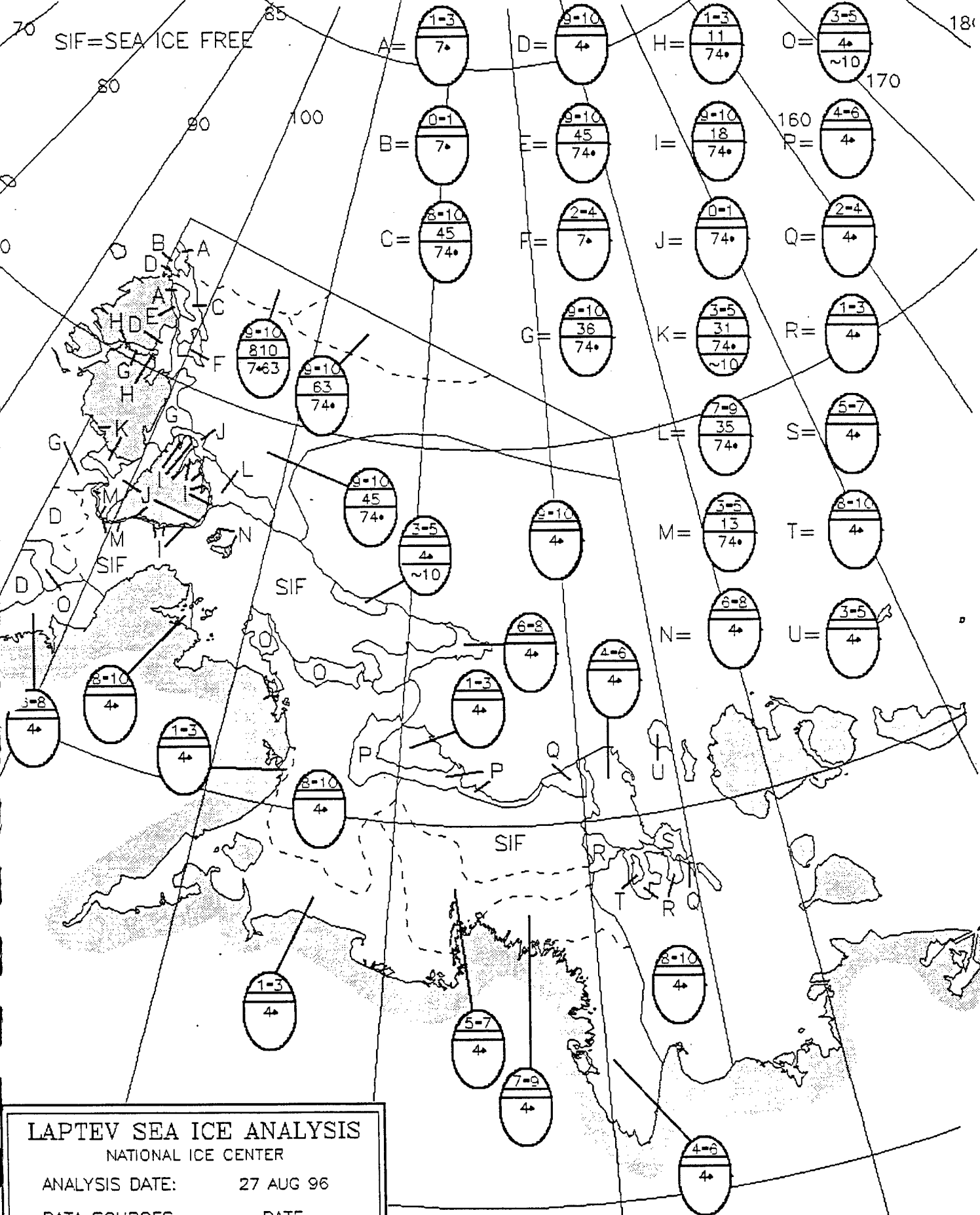
The National Ice Center (NIC), under sponsorship of the United States Navy, the United States Coast Guard, and the National Oceanic and Atmospheric Administration (NOAA), provides sea ice analyses encompassing the "Arctic" and the "Antarctic". These analyses continue the data set established under our previous name, the Joint Ice Center. These atlases continue the near real-time integration of remotely sensed data and point observations.

During the last week of August 1996, the West Arctic paper charts were replaced by digital charts in a Graphics Interface Format (*.GIF). Printouts of the digital GIF charts for all West Arctic regions are contained in this Special Arctic Supplement to the "Arctic Sea Ice Atlas". The atlas contains weekly charts depicting the sea ice extent and coverage in the Northern Hemisphere, West Arctic from the last week in August 1996 through December 1996, and will be the final atlas published in a hard copy format by the NIC. Future annual atlases will be available in a digital format on CD-ROM through the National Snow and Ice Data Center (<http://www-nsidc.colorado.edu>). NSIDC is the official archive center for the NIC.

The NIC uses a wide variety of data sources in the production of sea ice analyses. Table 1 lists the data sources used to produce the West Arctic weekly ice analyses contained in this publication.

Please direct questions or comments to the NIC Liaison Branch, at phone number (301) 457-5303 extension 311 or 303, facsimile number (301) 457-5300, or electronic mail address: liaison@natice.noaa.gov

SIF=SEA ICE FREE



LAPTEV SEA ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 27 AUG 96

DATA SOURCES DATE

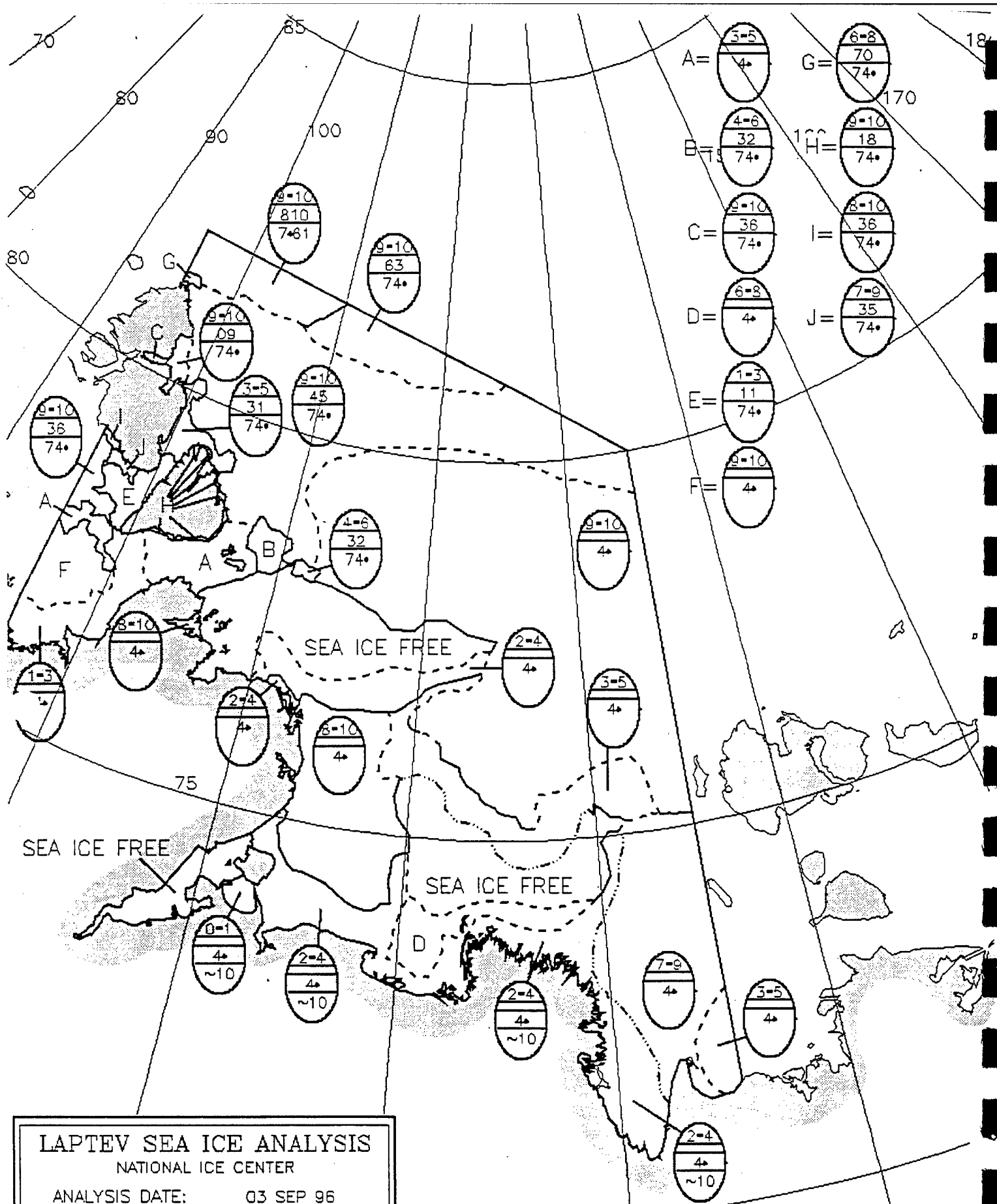
RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 25-26 AUG 96

RADAR.....



LAPTEV SEA ICE ANALYSIS NATIONAL ICE CENTER

ANALYSIS DATE: 03 SEP 96

DATA SOURCES DATE

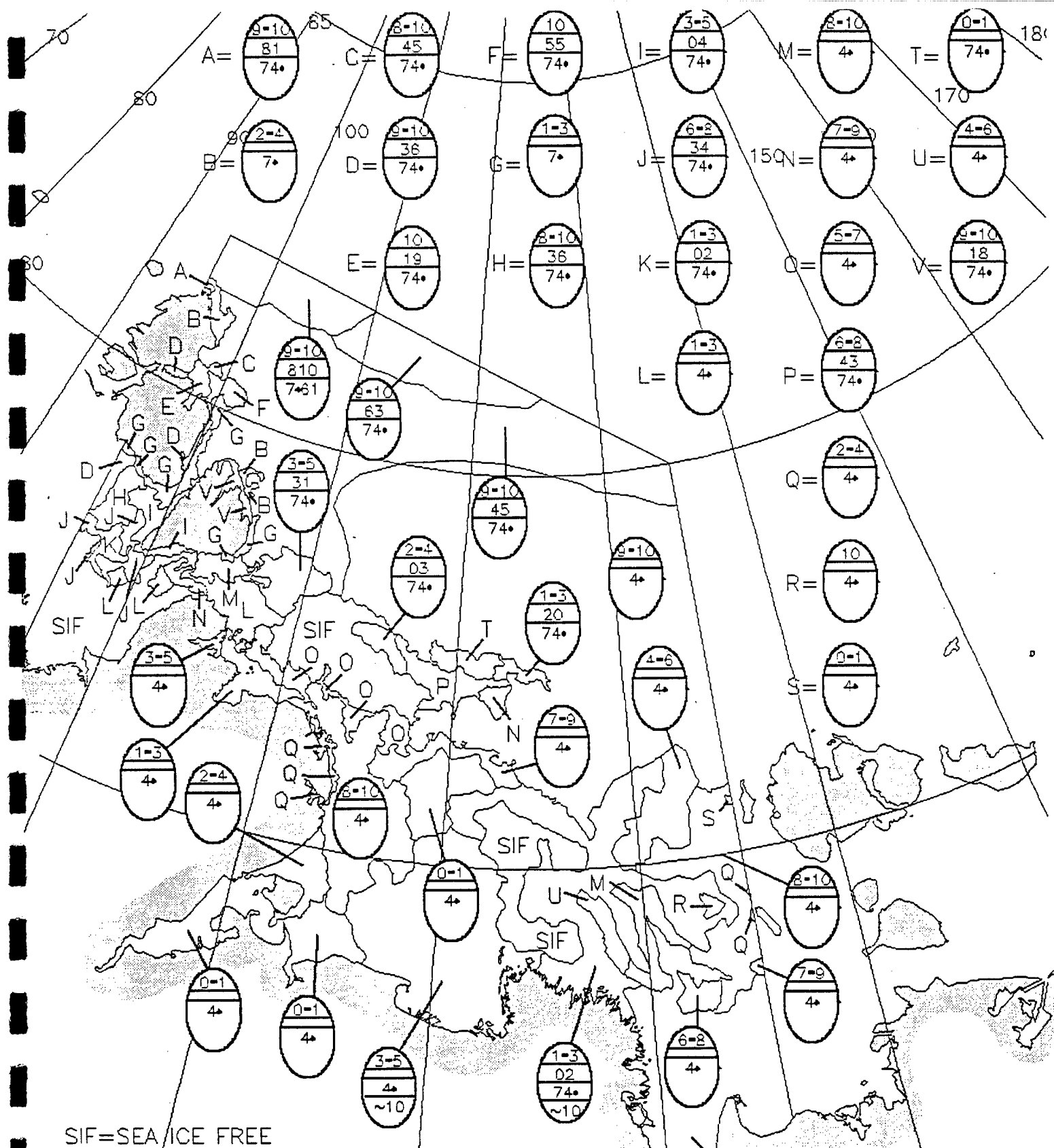
RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 02-03 SEP 96

RADAR.....



SIF=SEA ICE FREE

LAPTEV SEA ICE ANALYSIS
 NATIONAL ICE CENTER

ANALYSIS DATE: 10 SEP 96

DATA SOURCES DATE

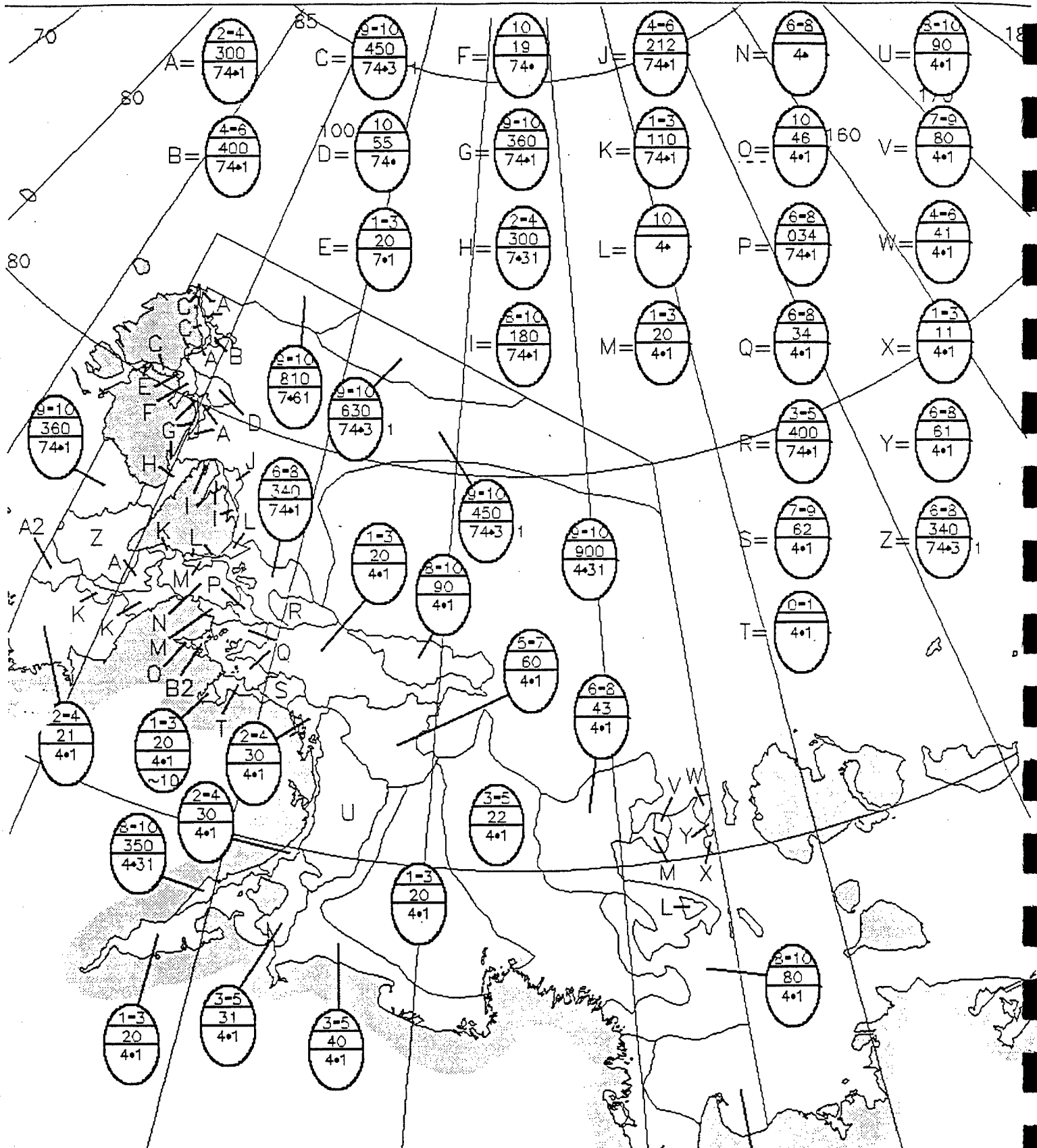
RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 8-10 SEP 96

RADAR.....



LAPTEV SEA ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 17 SEP 96

DATA SOURCES DATE

RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 15-17 SEP 96

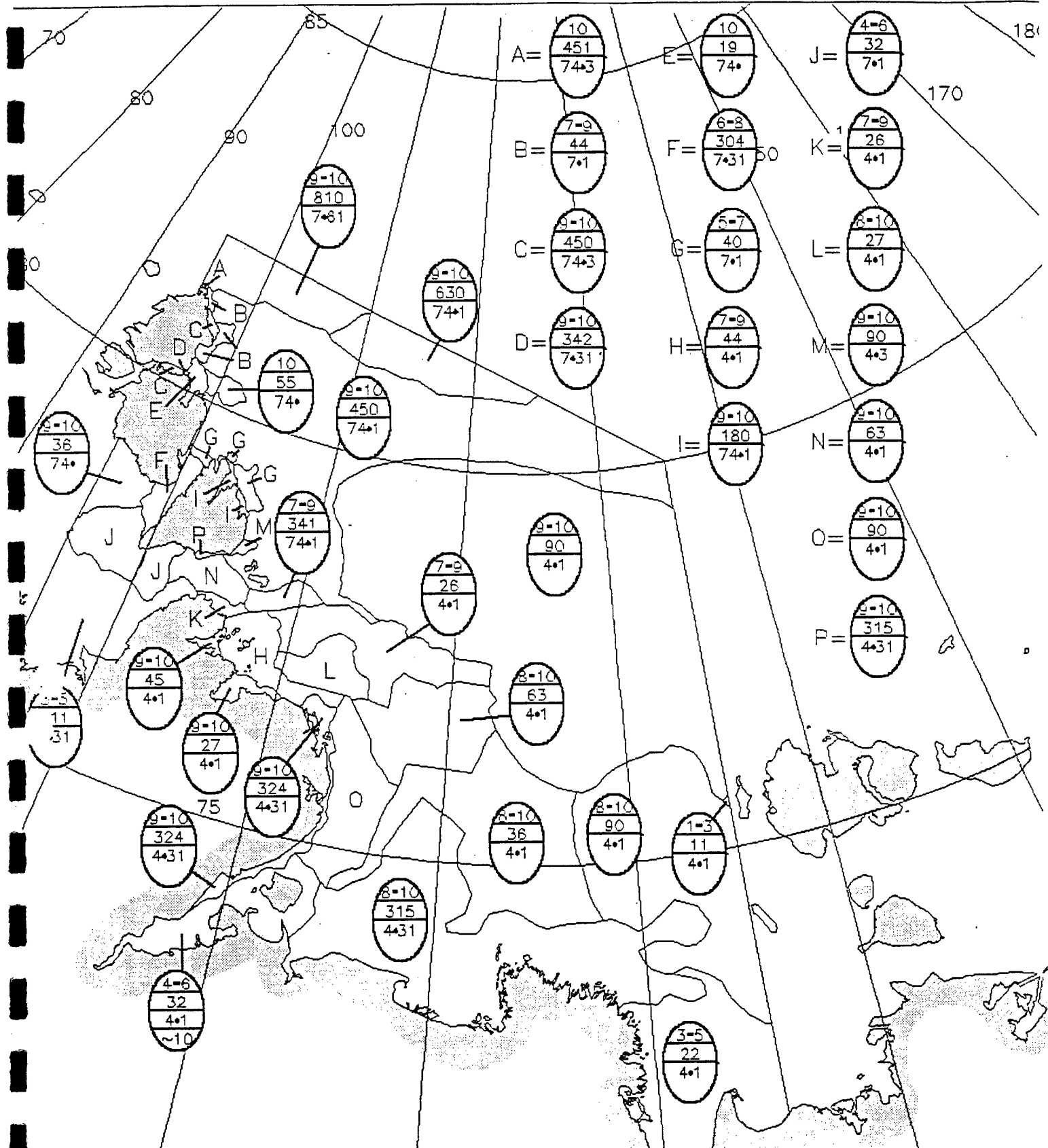
RADAR.....

A2= $\frac{2-4}{21}$
4*1

B2= $\frac{2-4}{45}$
4*1

$\frac{2-4}{30}$
4*1

$\frac{2-4}{21}$
4*1



LAPTEV SEA ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 24 SEP 96

DATA SOURCES DATE

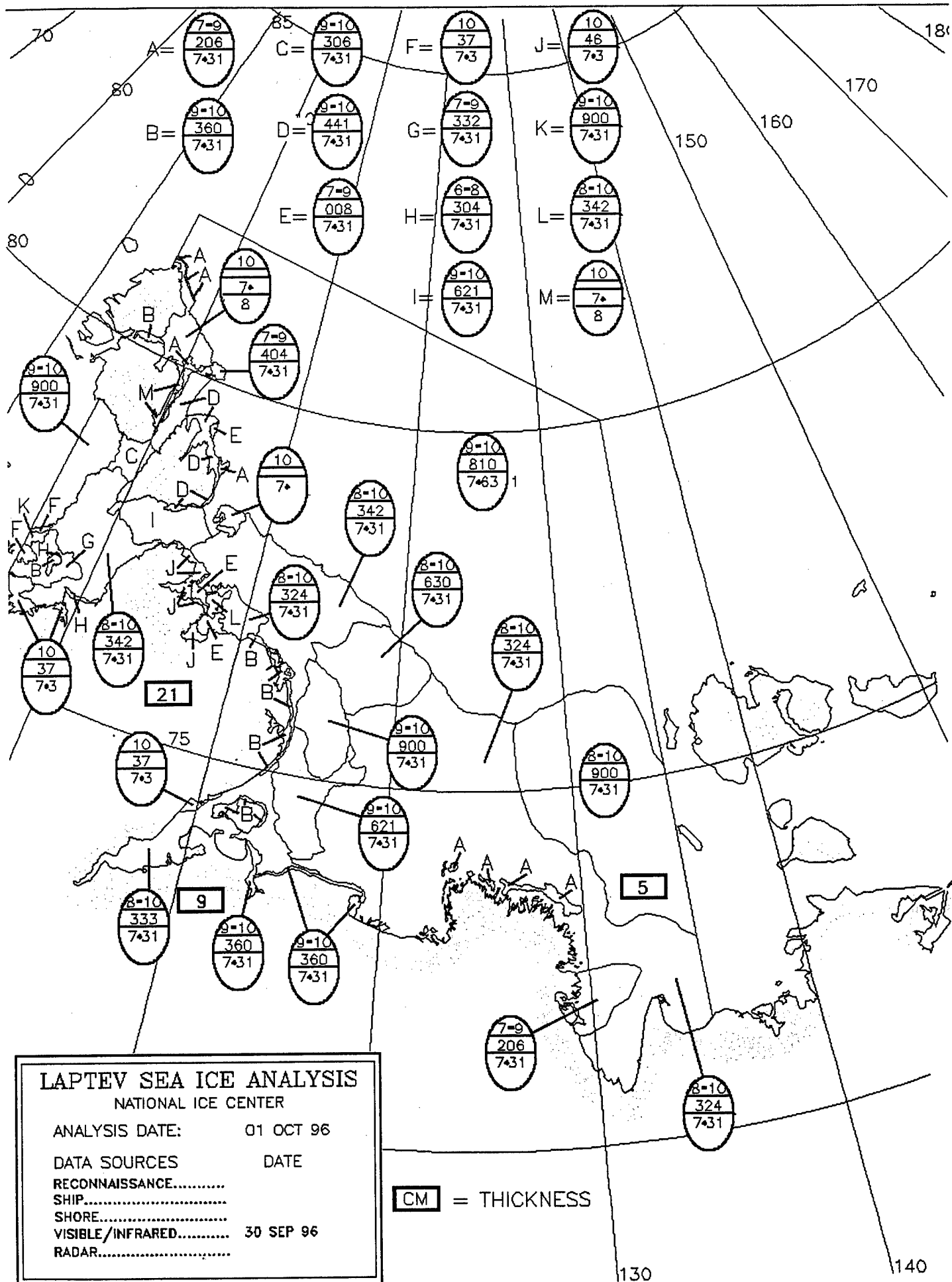
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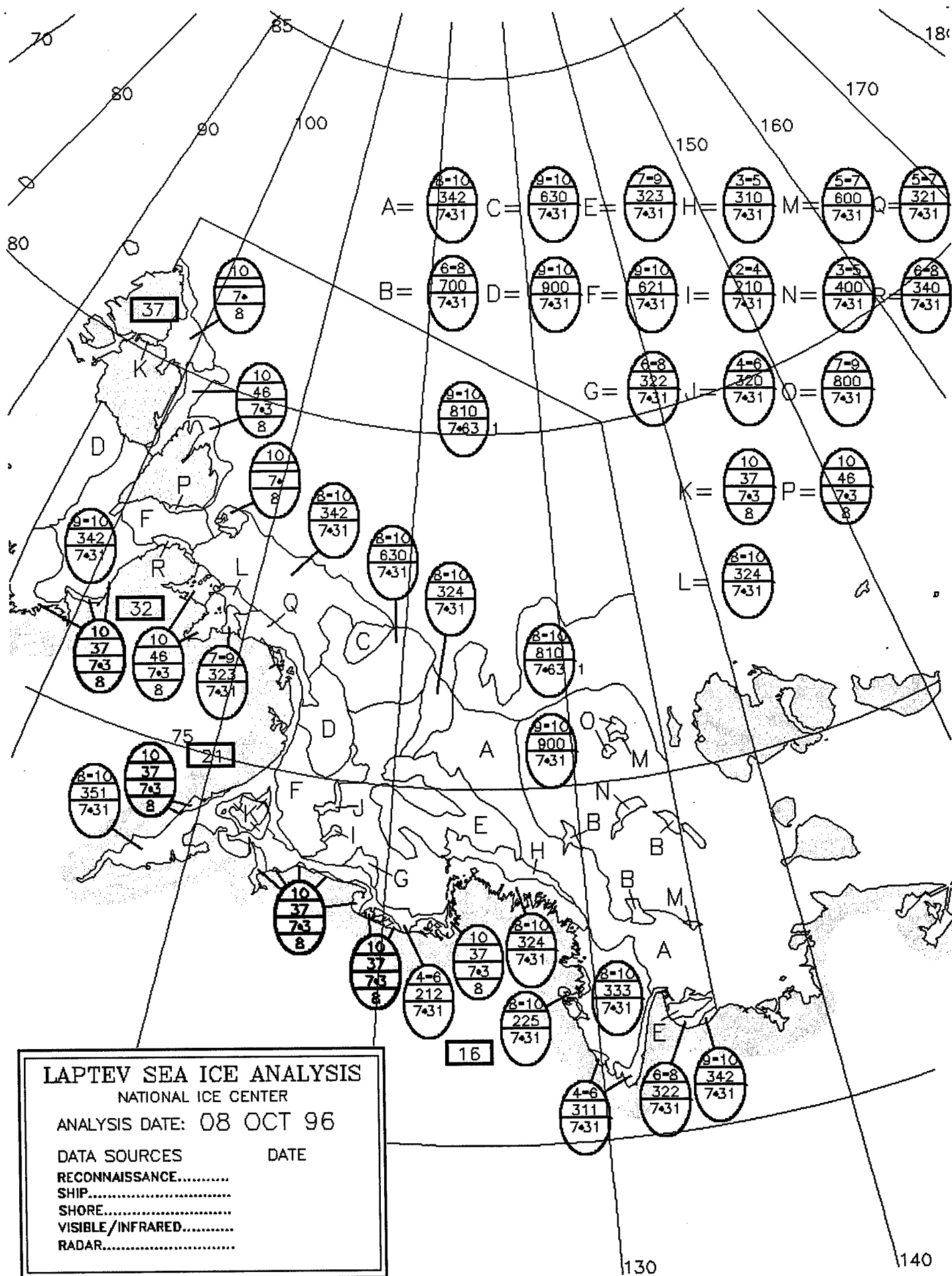
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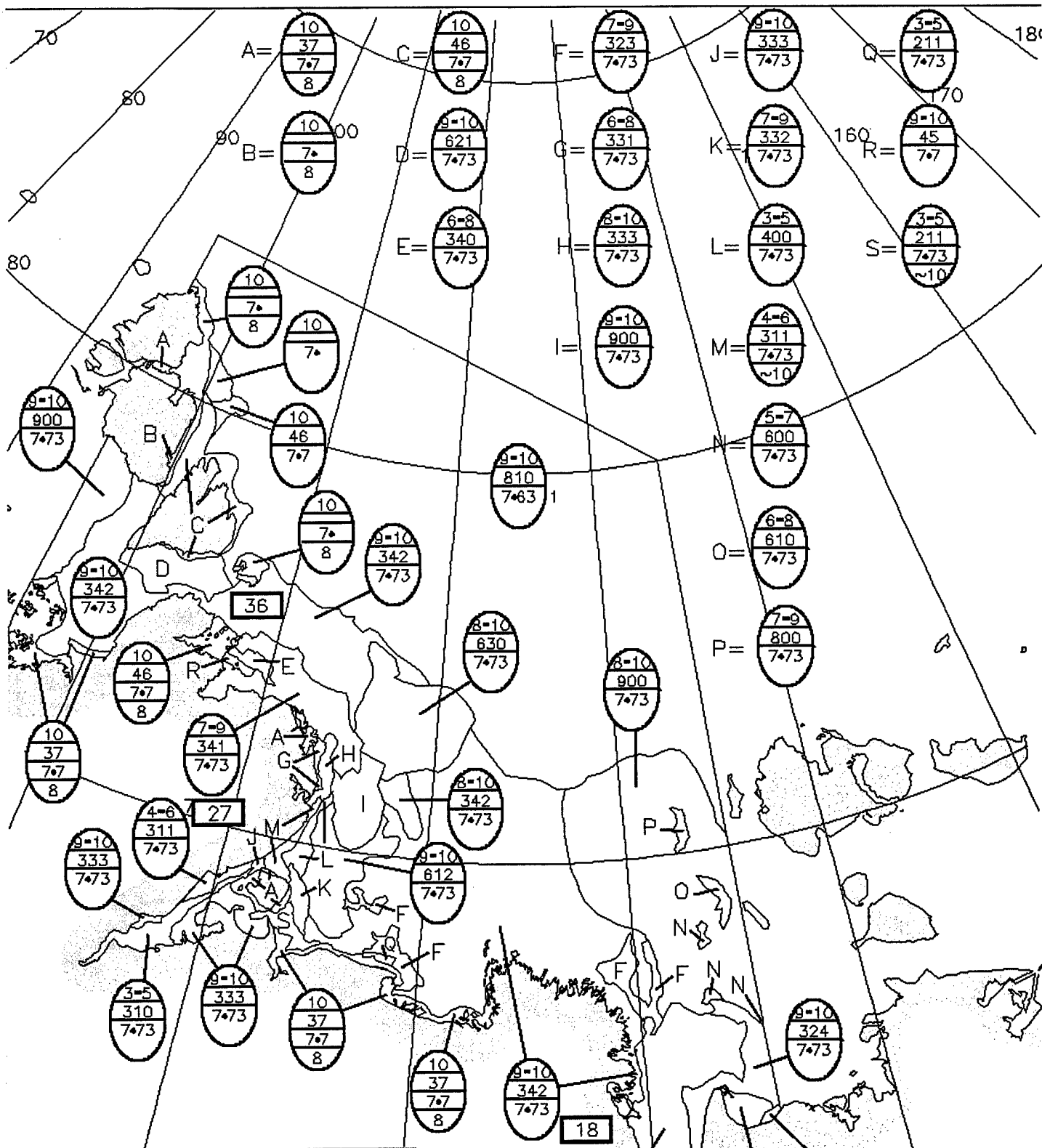
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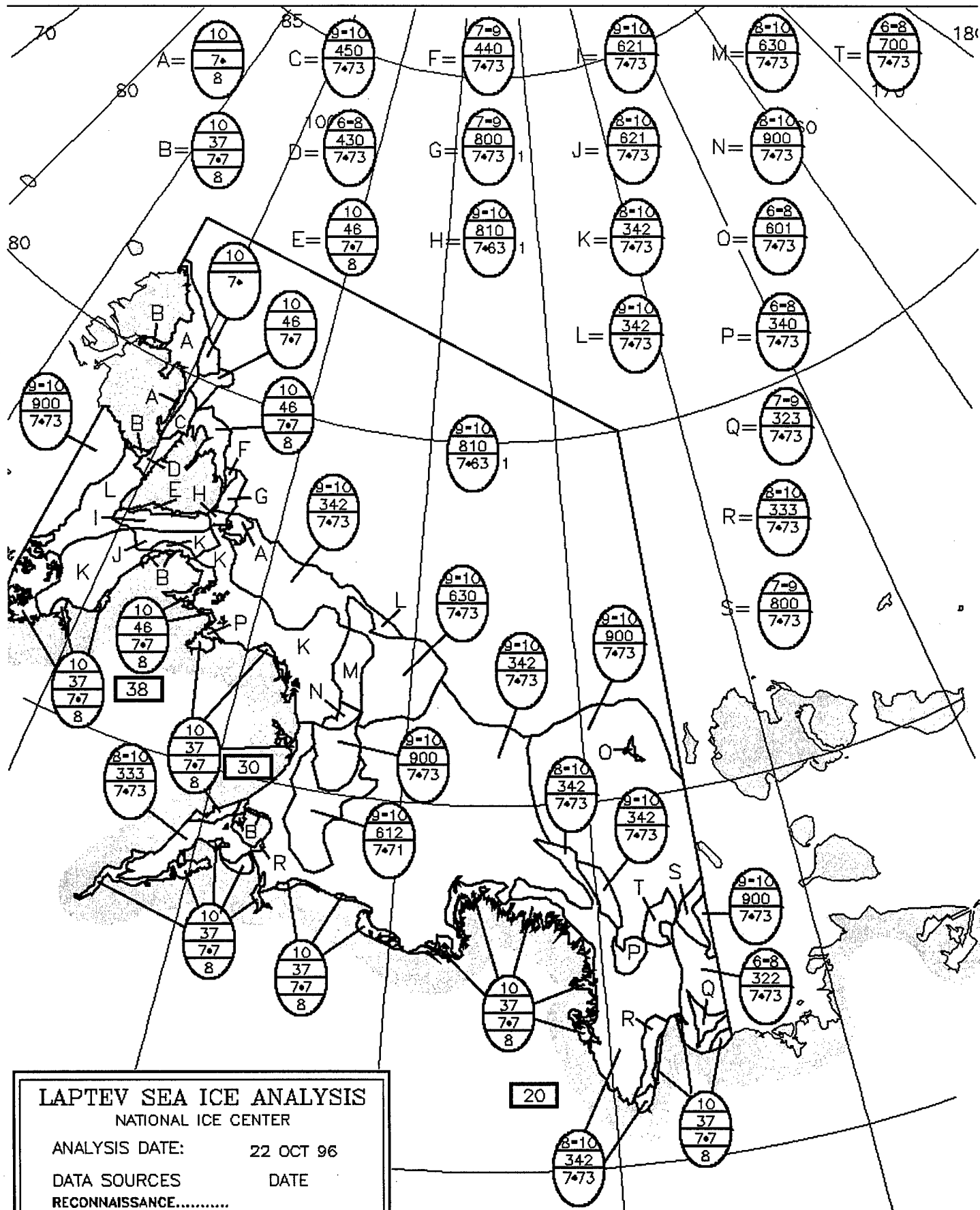
VISIBLE/INFRARED..... 21-23 SEP 96

RADAR.....









LAPTEV SEA ICE ANALYSIS NATIONAL ICE CENTER

ANALYSIS DATE: 22 OCT 96

DATA SOURCES DATE

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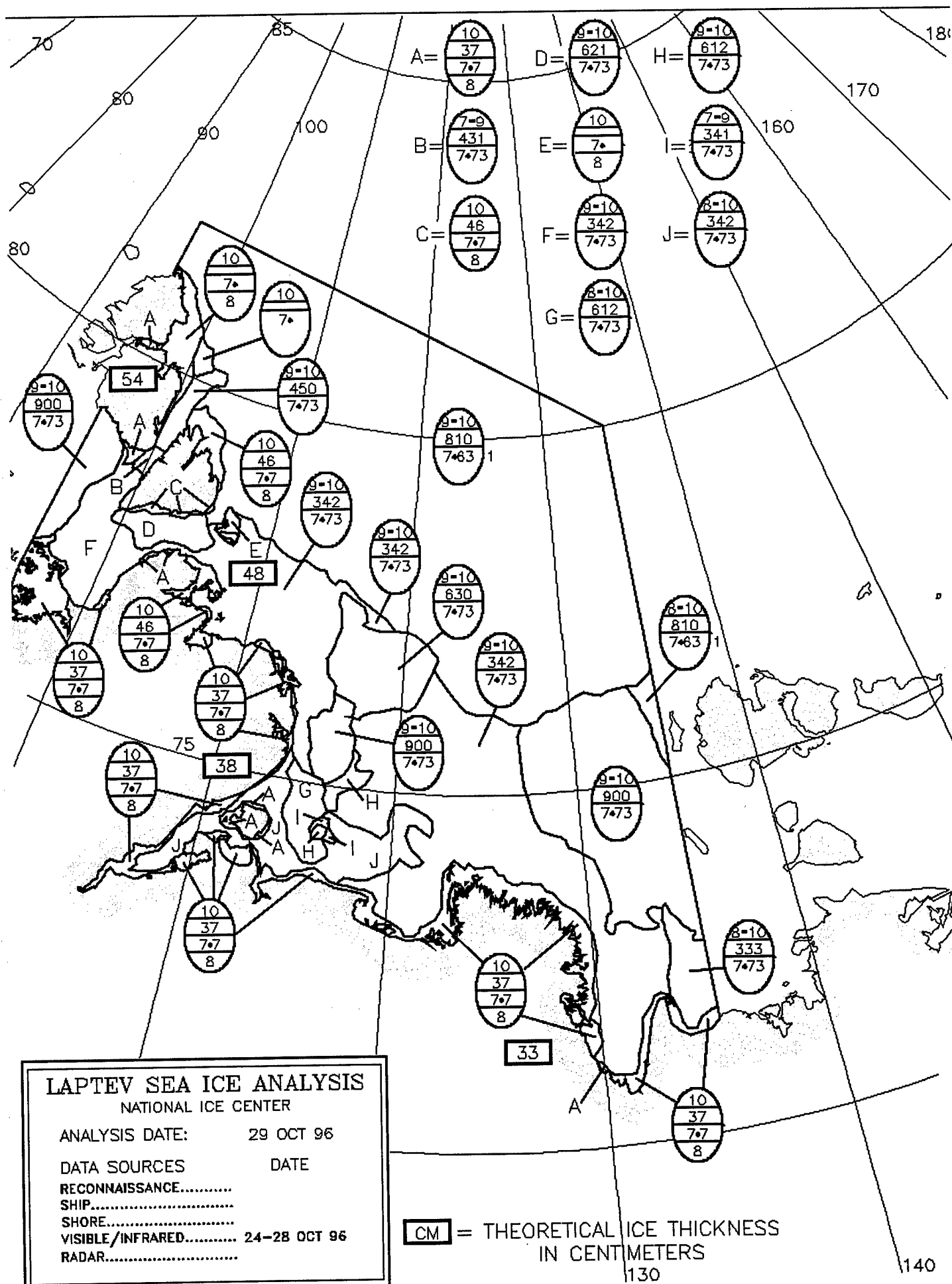
SHIP.....

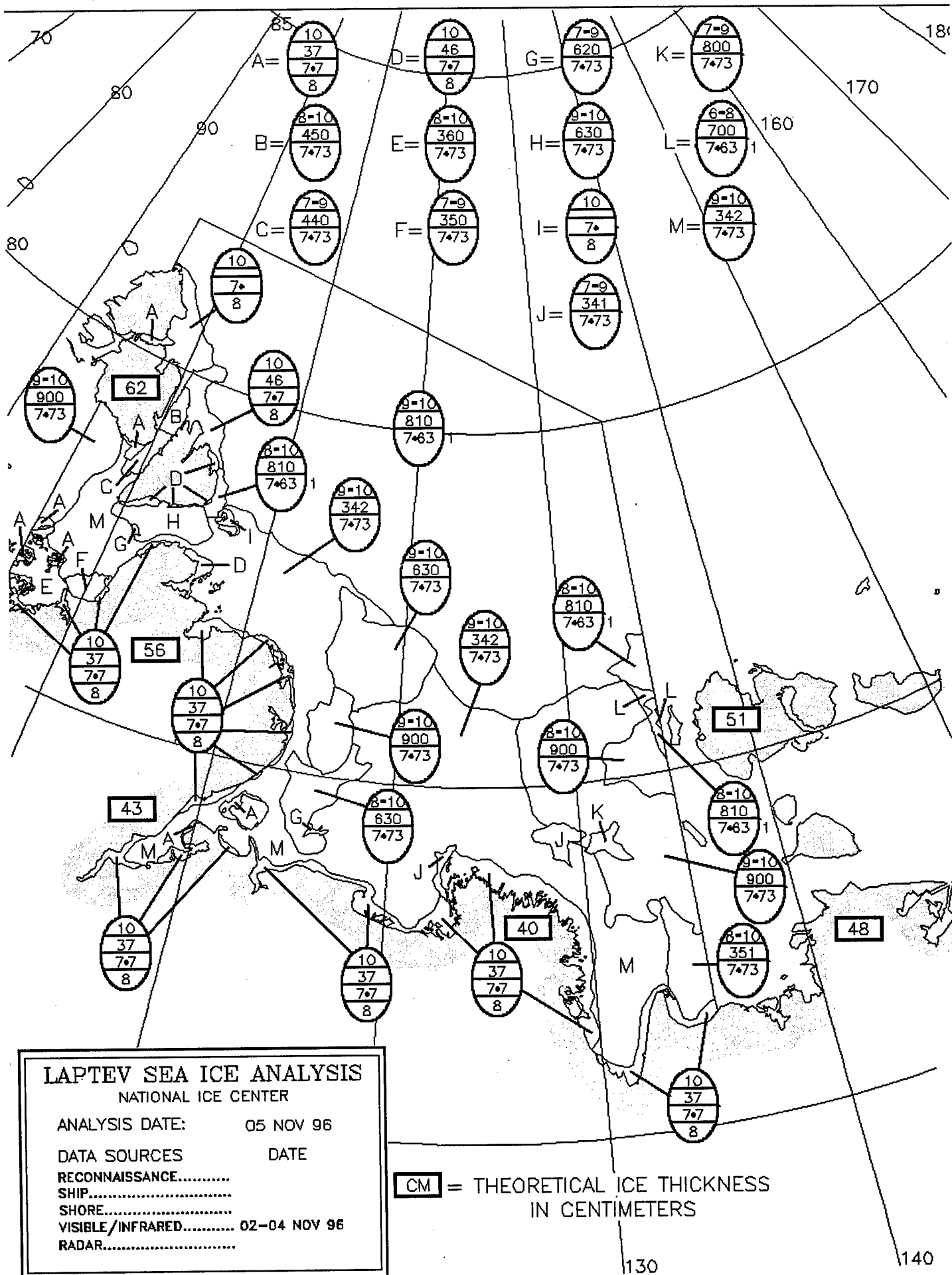
SHORE.....

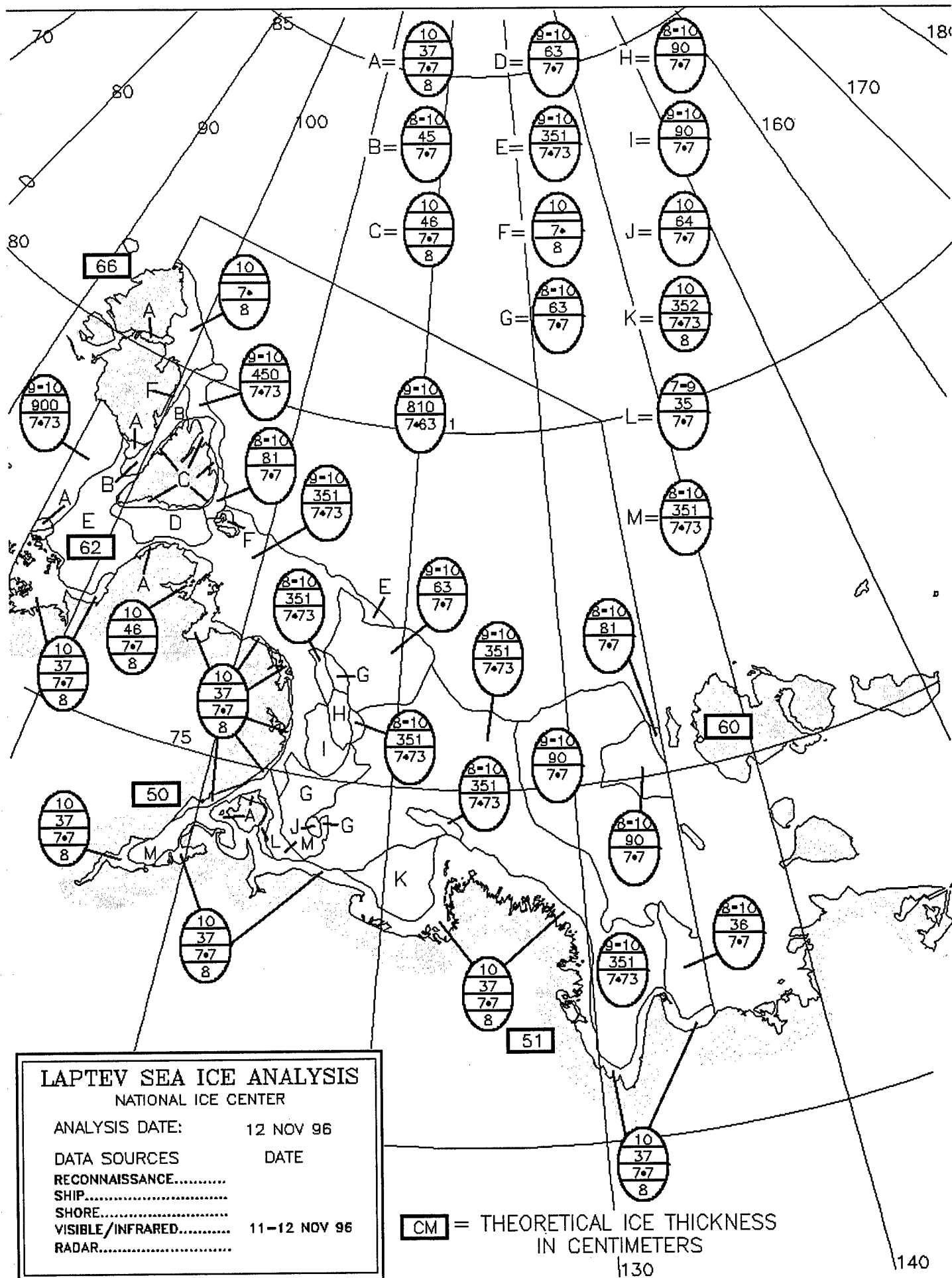
VISIBLE/INFRARED..... 19-22 OCT 96

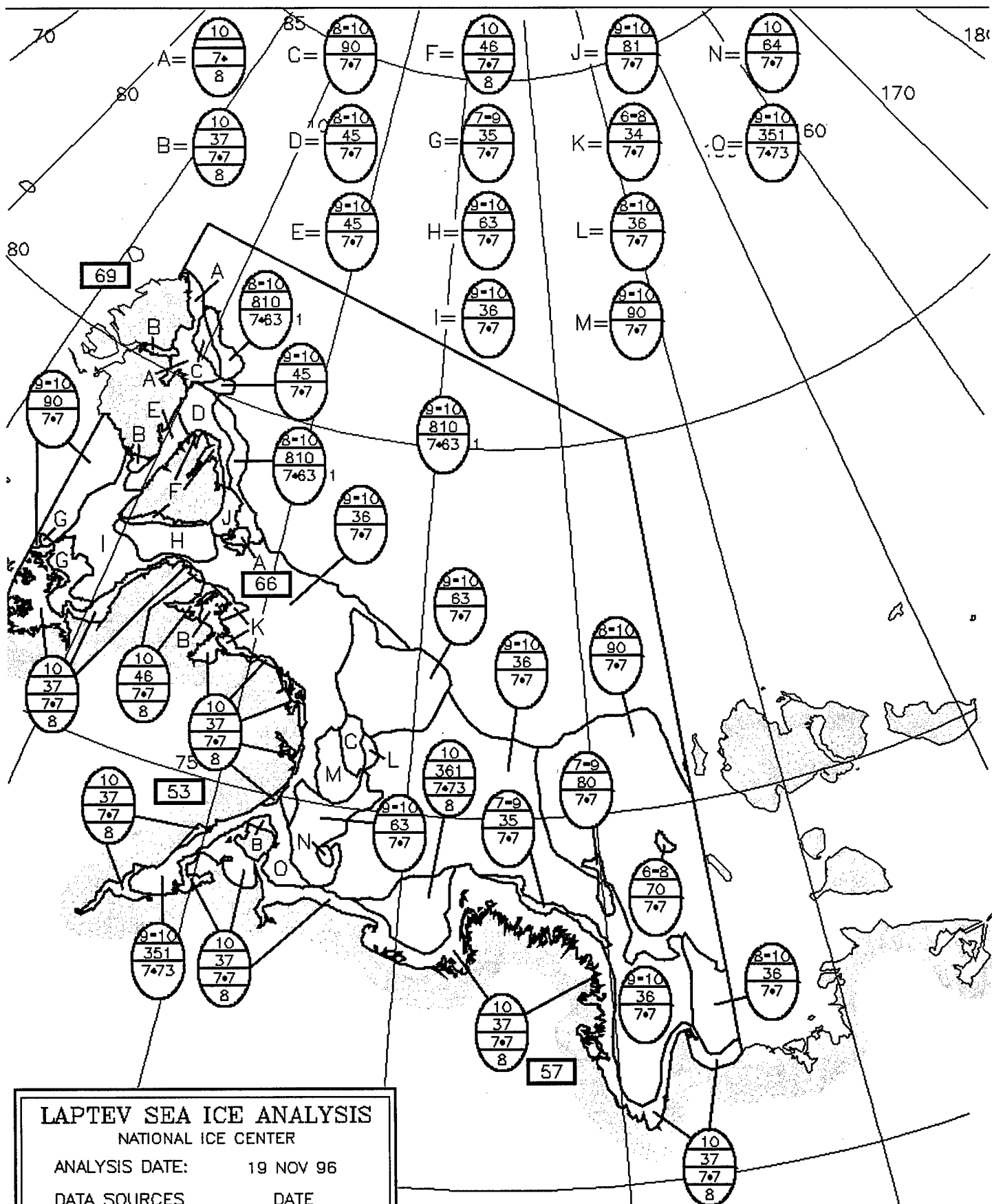
RADAR.....

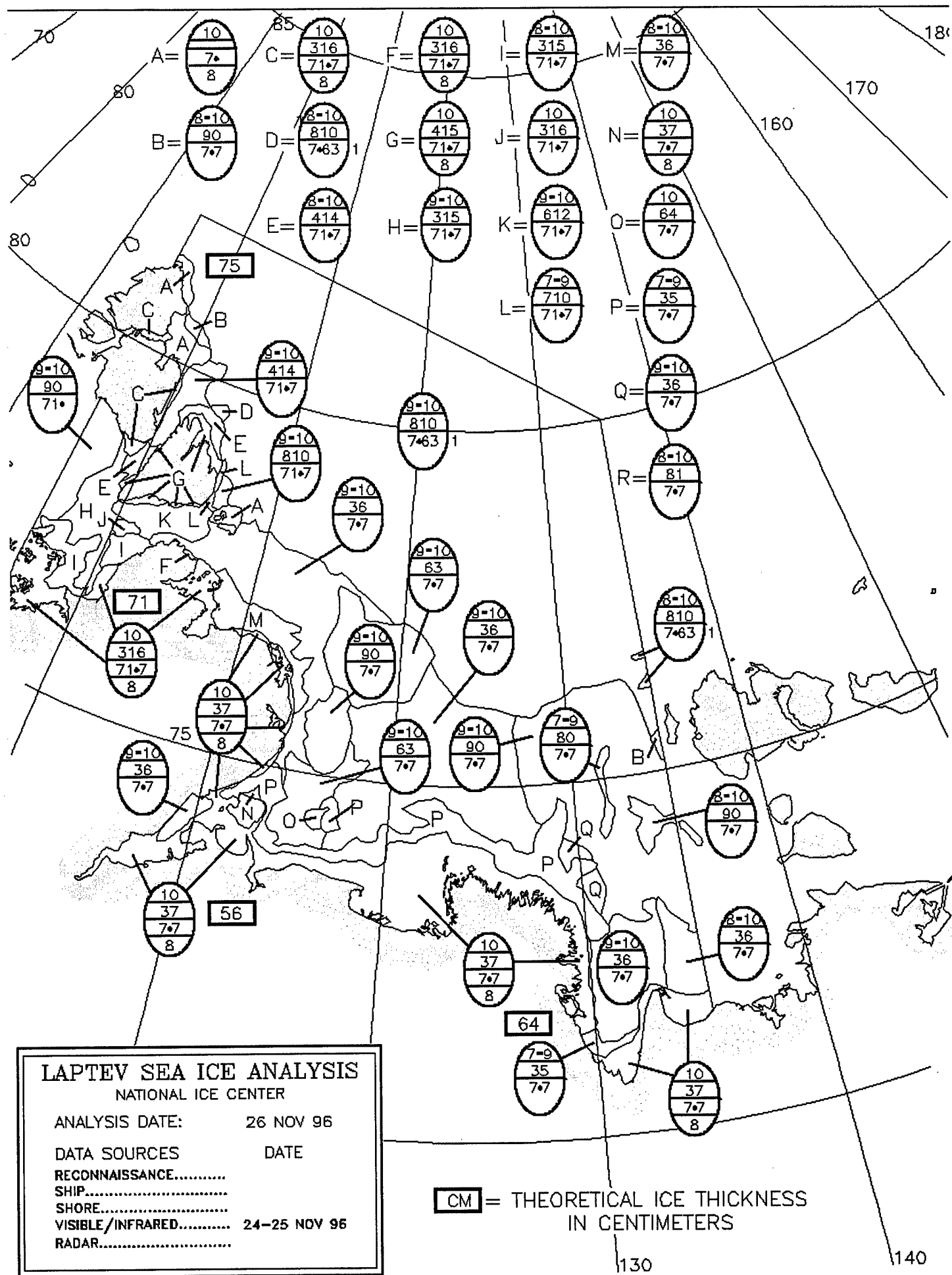
CM = THEORETICAL ICE THICKNESS
IN CENTIMETERS

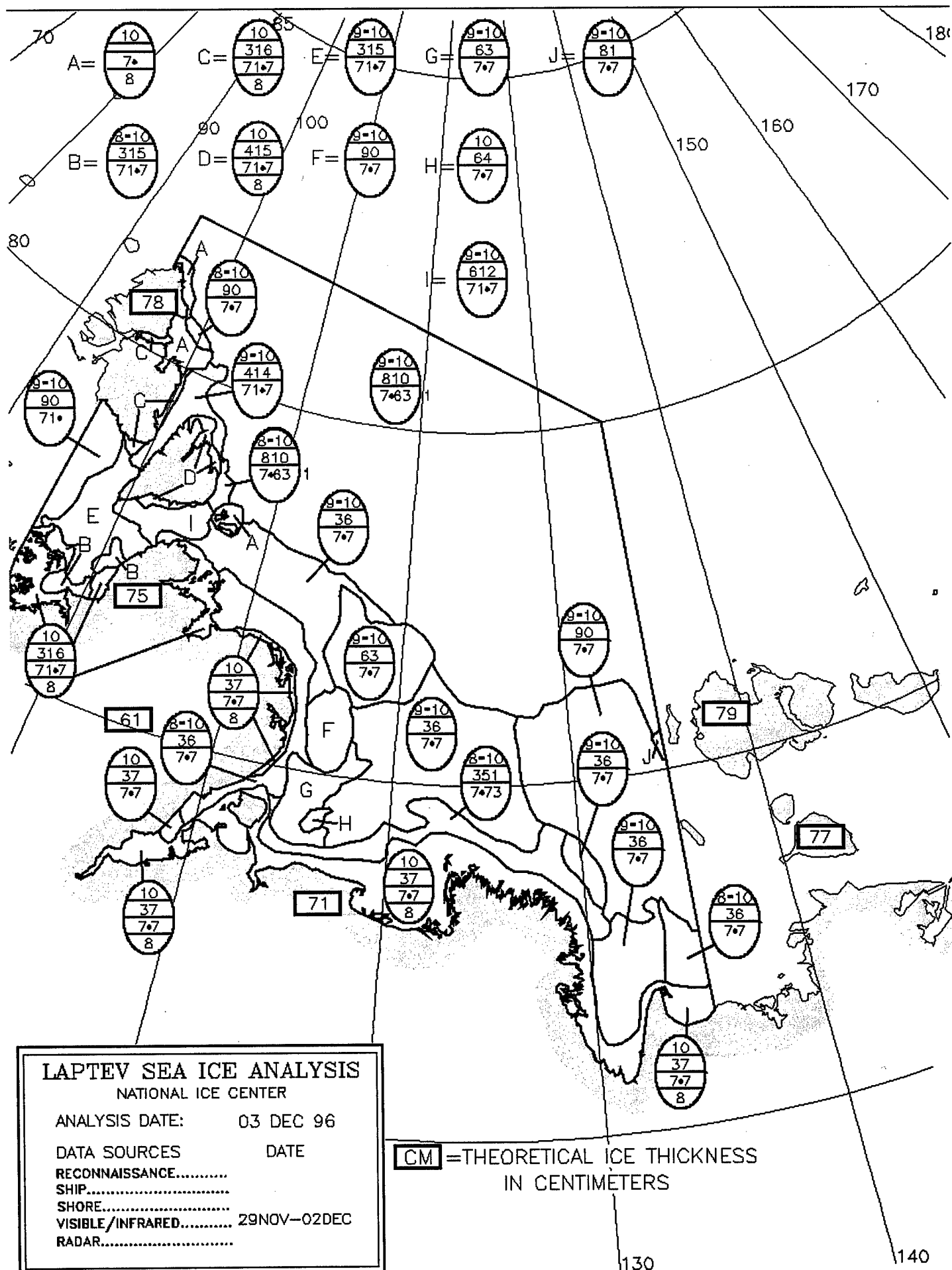


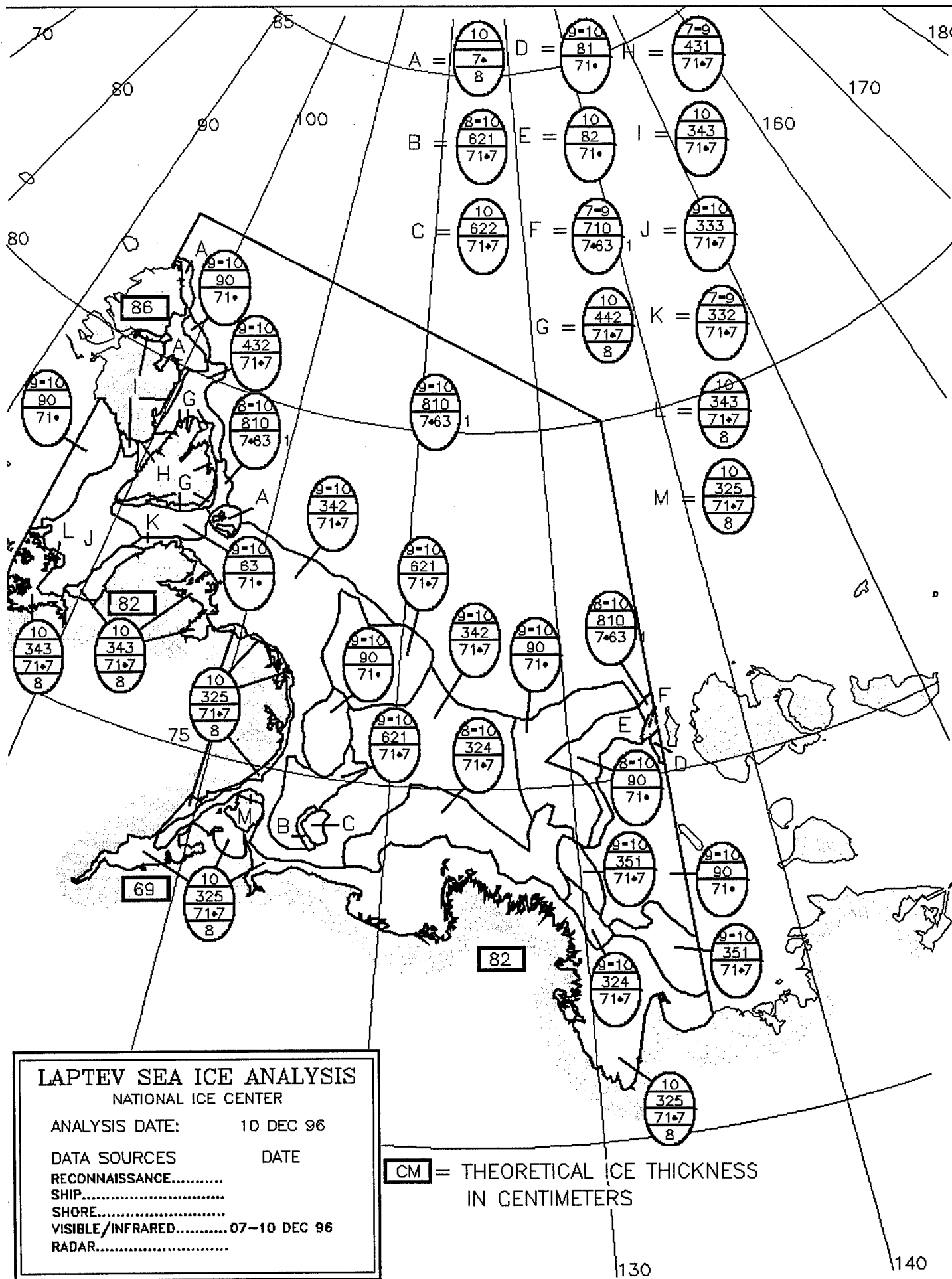


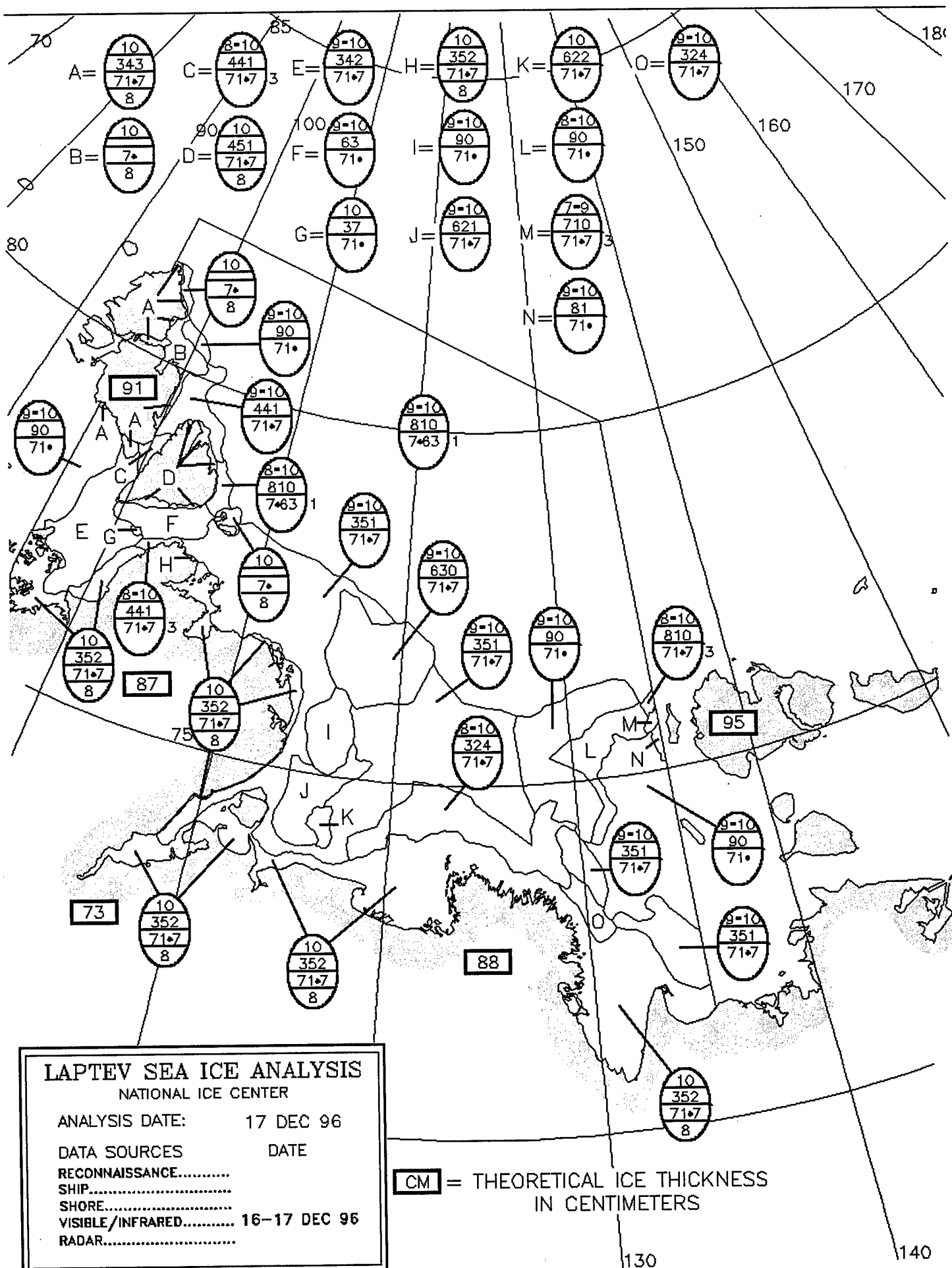


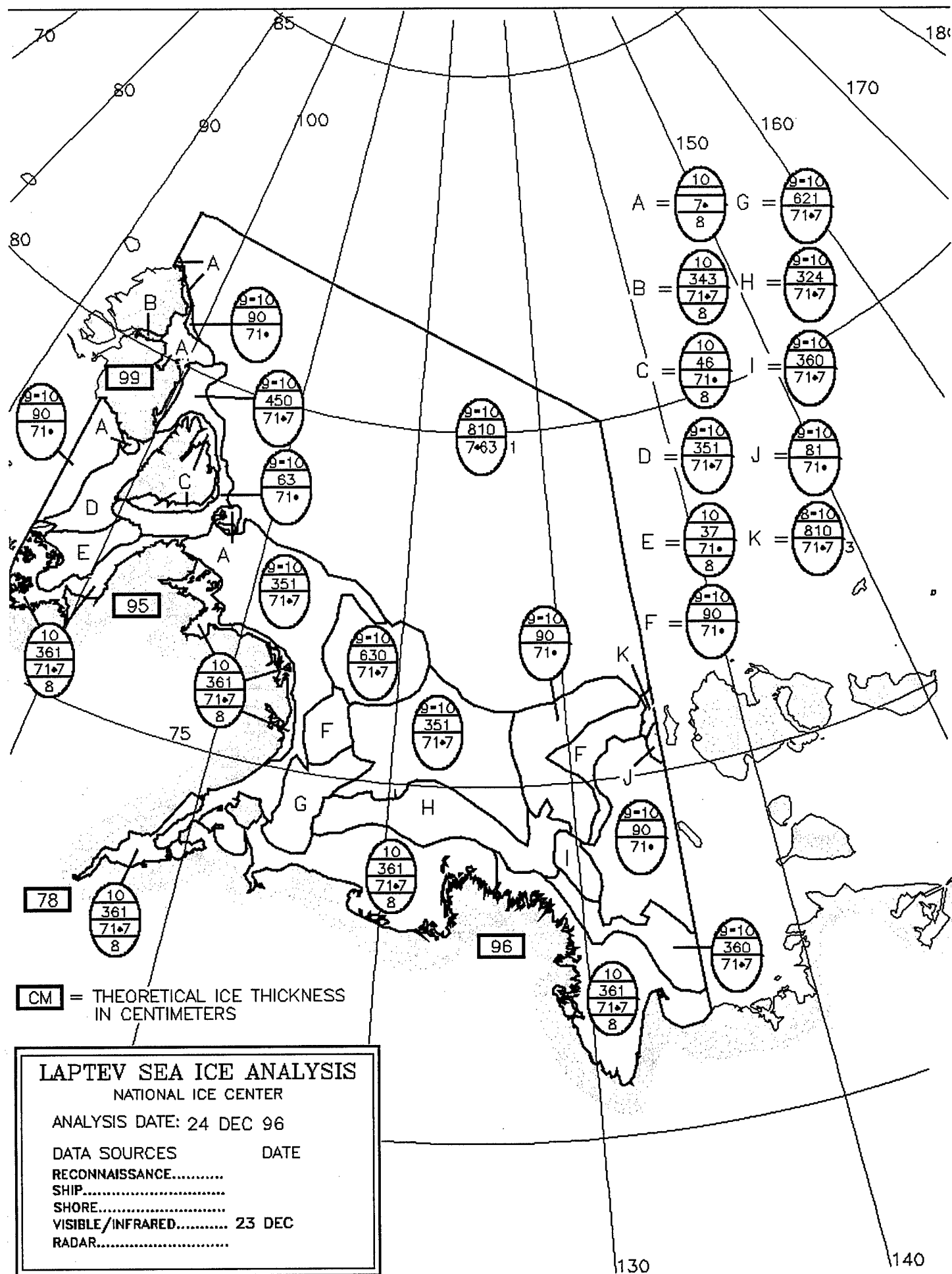


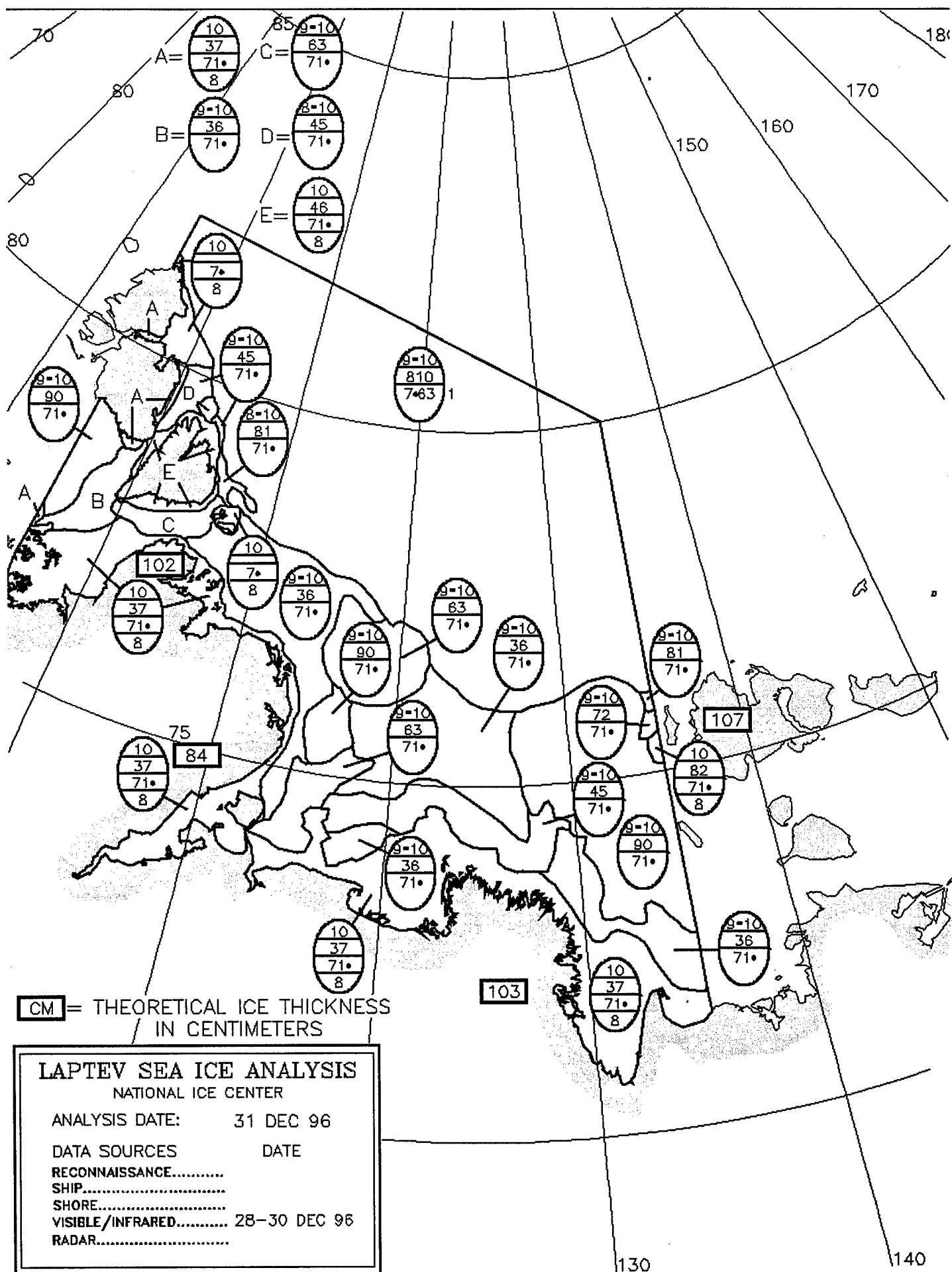


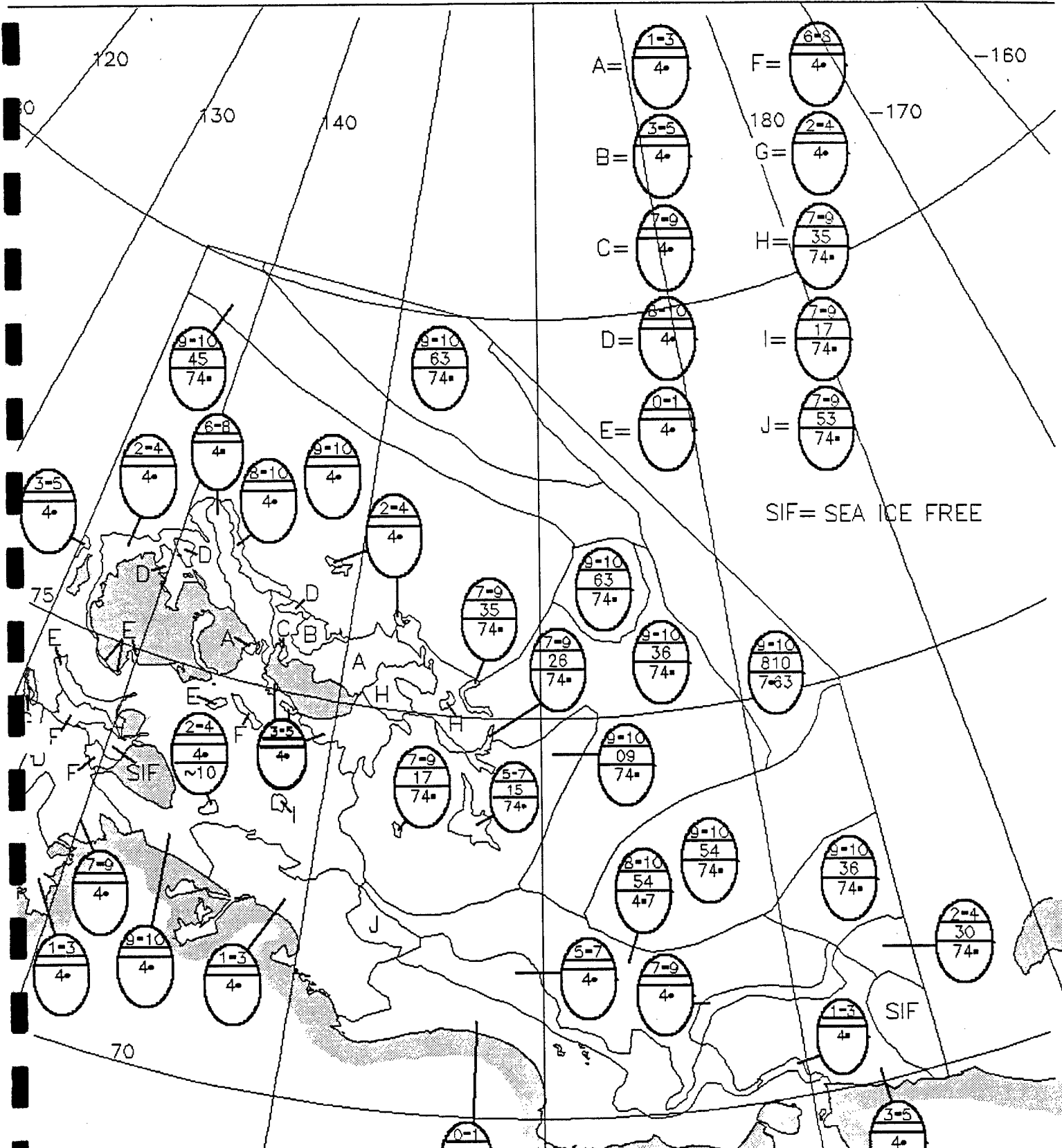






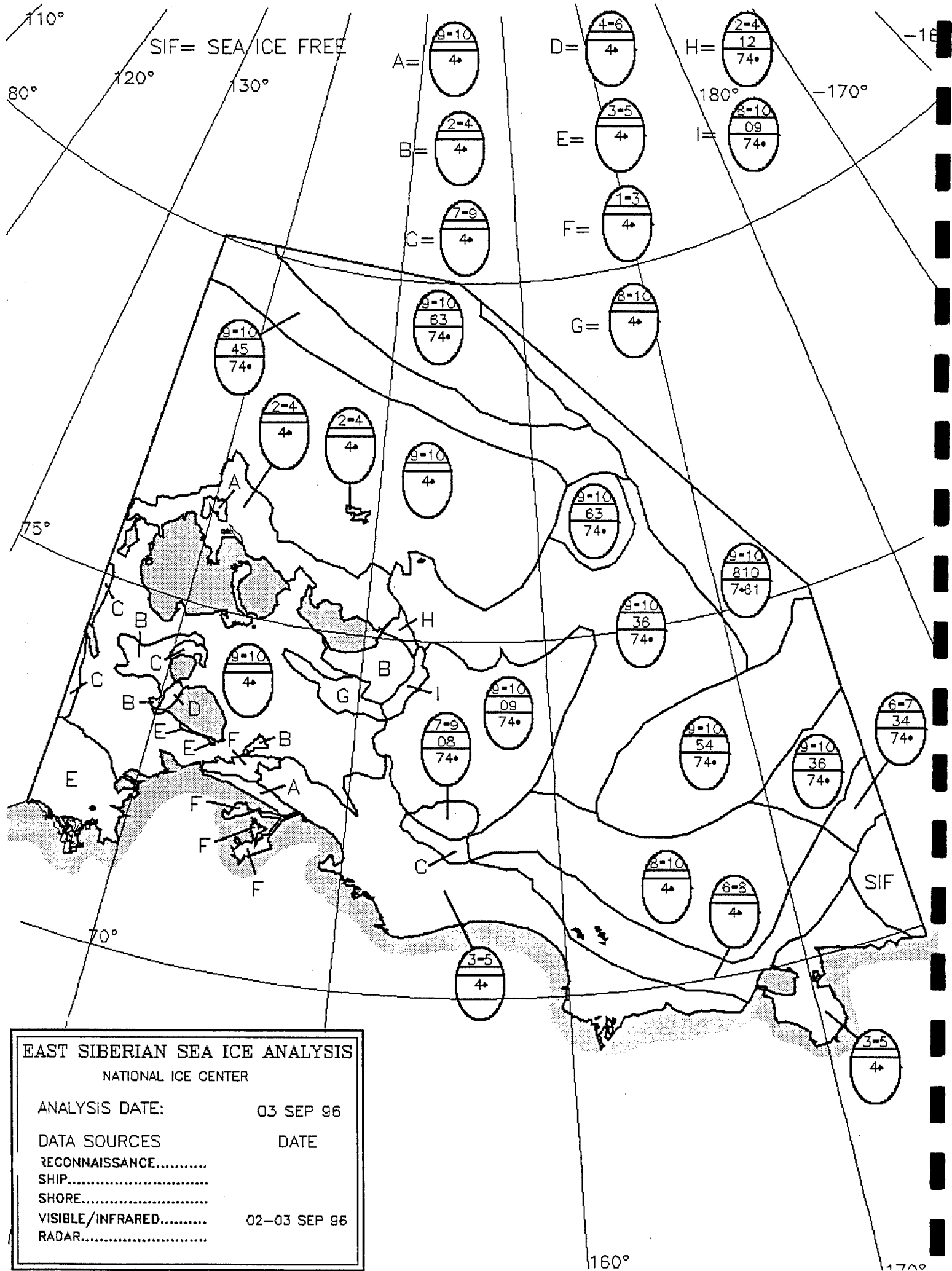


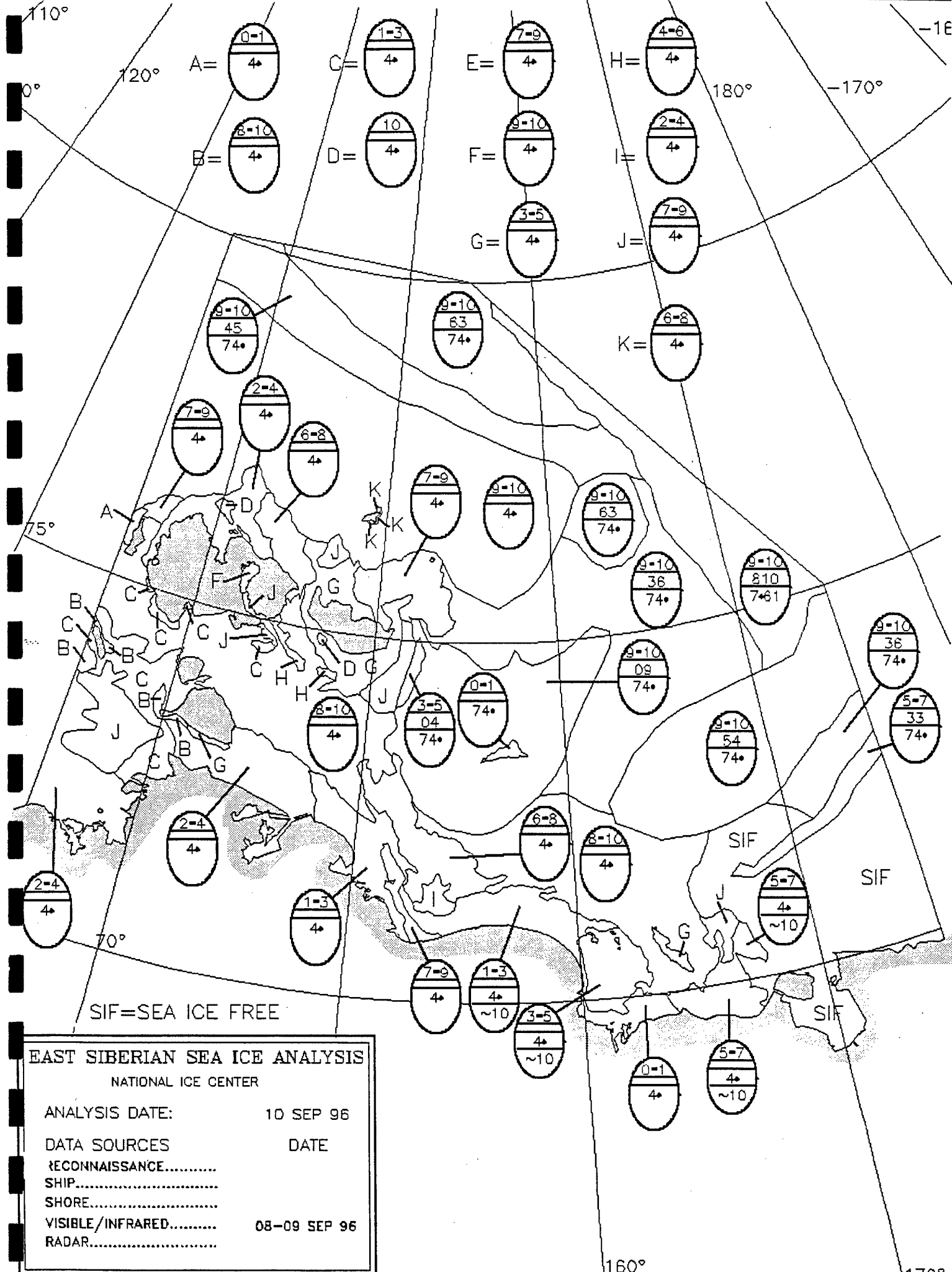


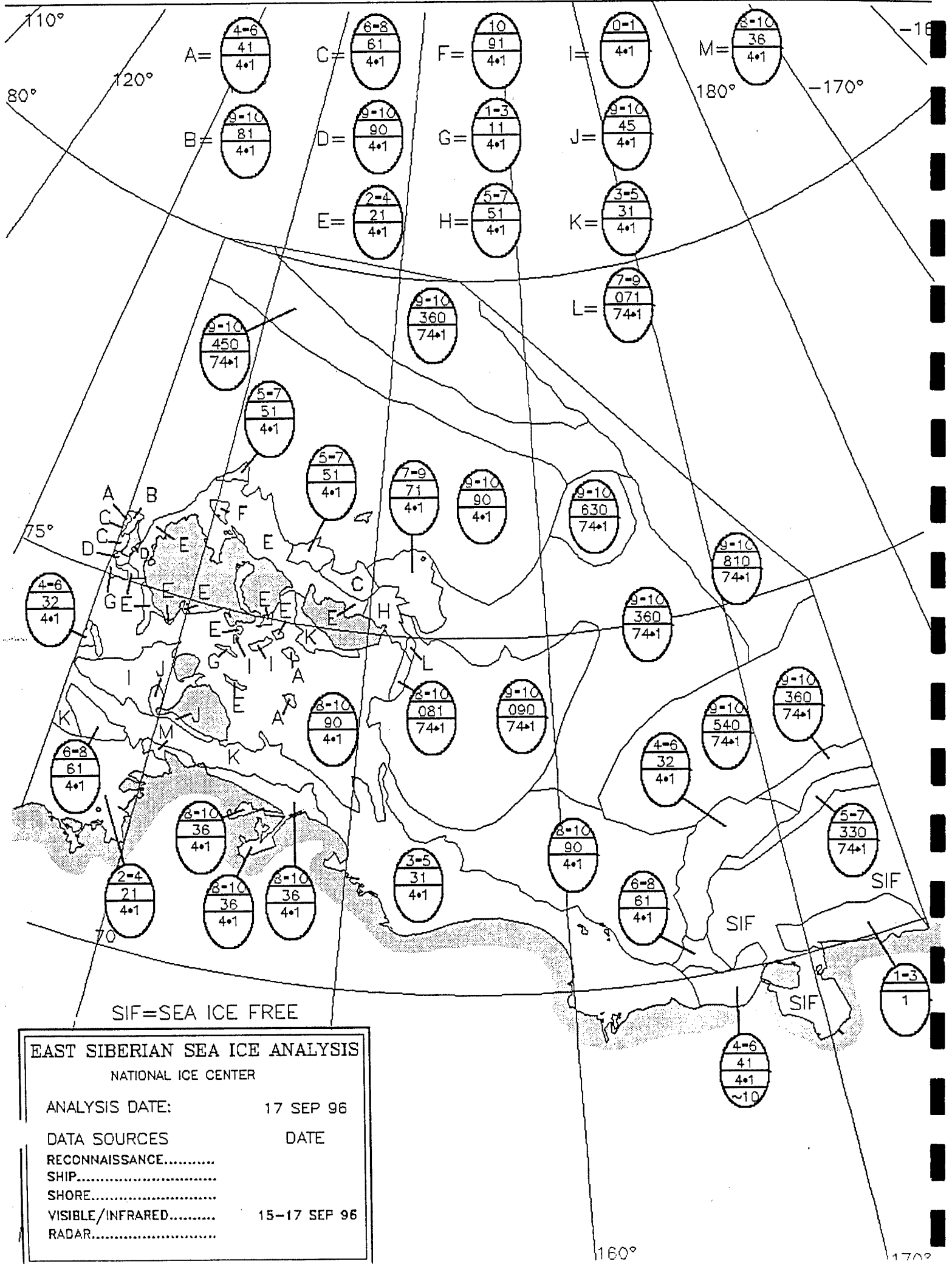


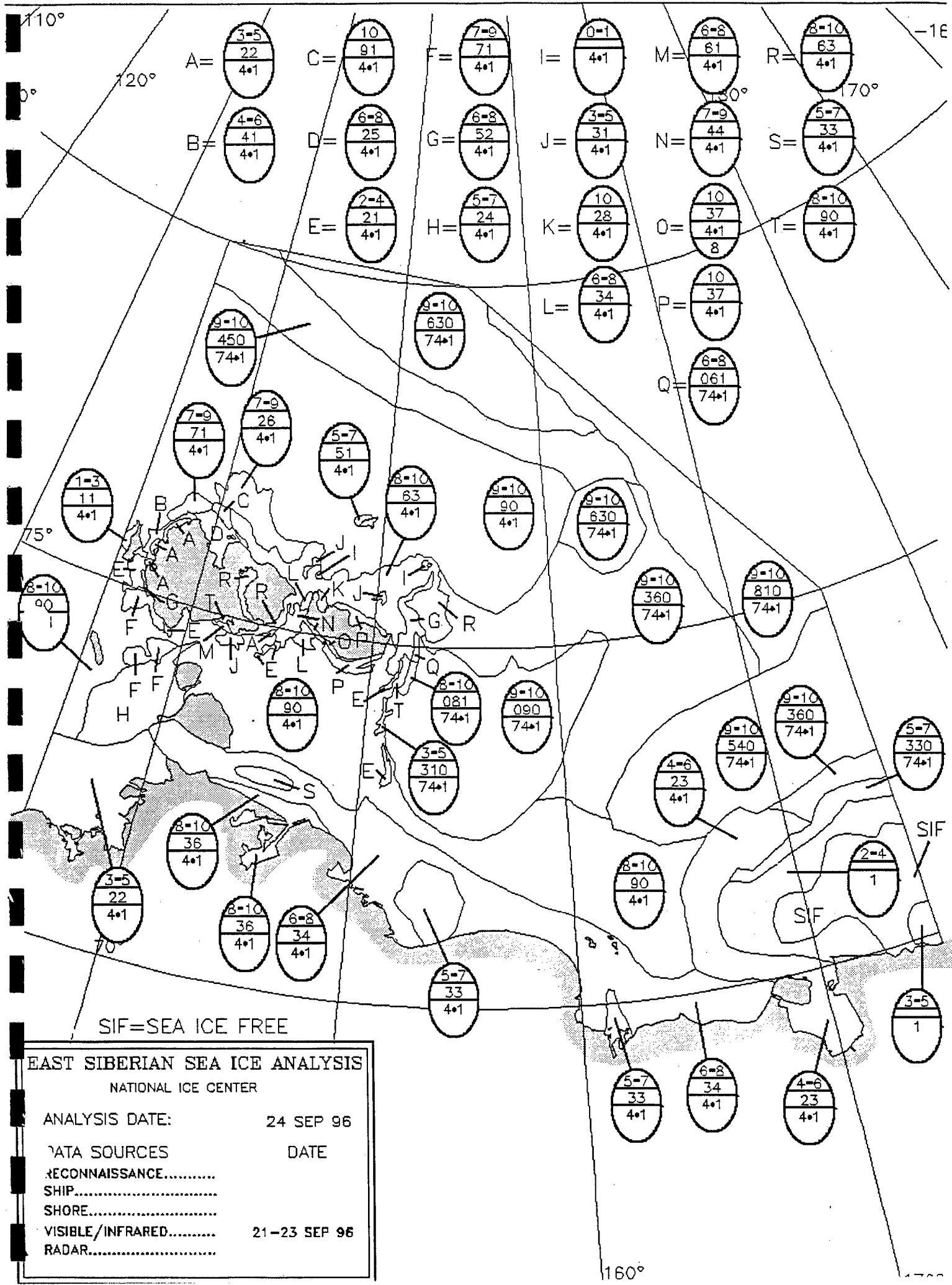
SIF= SEA ICE FREE

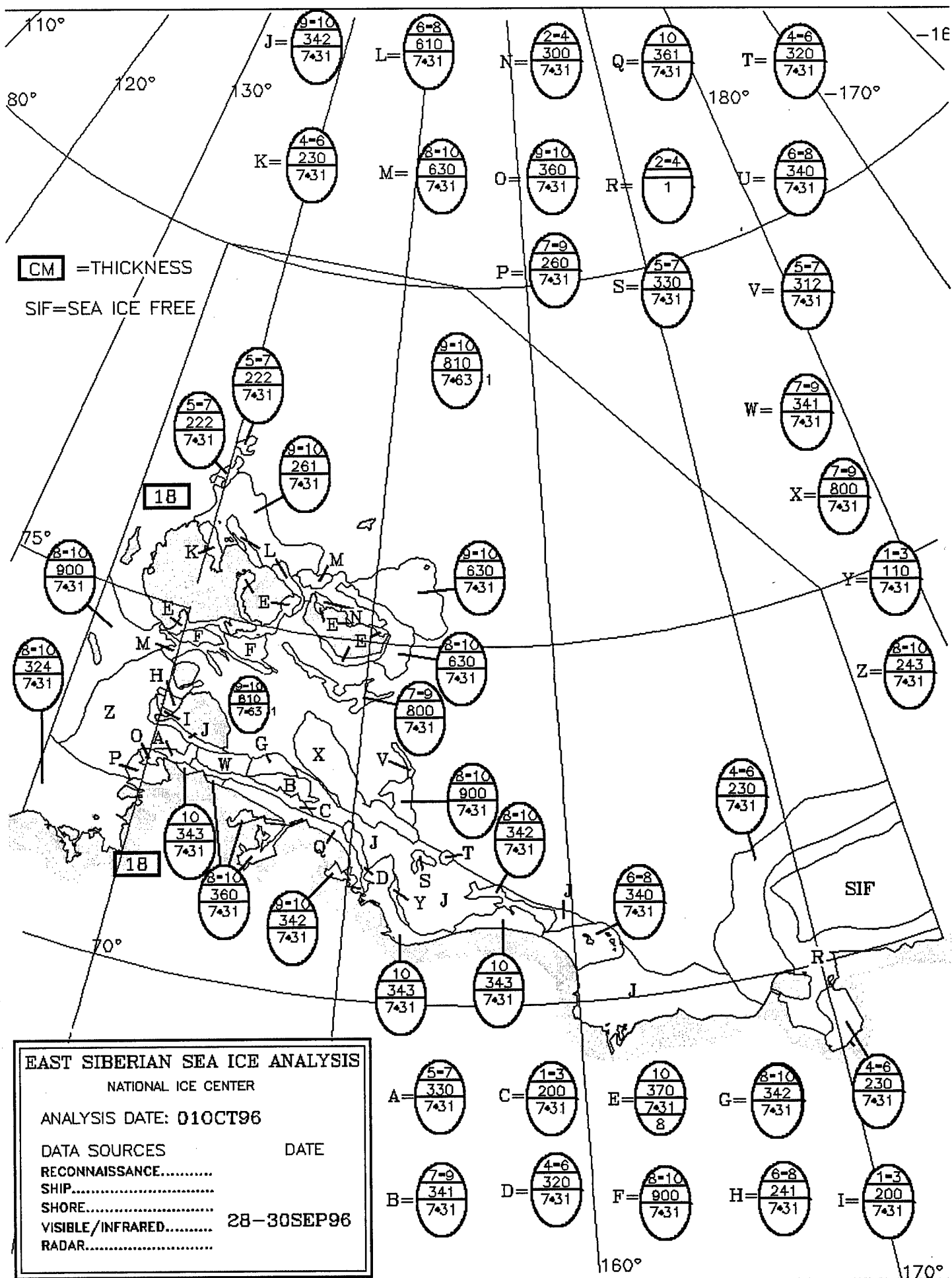
EAST SIBERIAN SEA ICE ANALYSIS	
NATIONAL ICE CENTER	
ANALYSIS DATE:	27 AUG 96
DATA SOURCES	DATE
RECONNAISSANCE.....	
SHIP.....	
SHORE.....	
VISIBLE/INFRARED.....	25-26 AUG 96
RADAR.....	

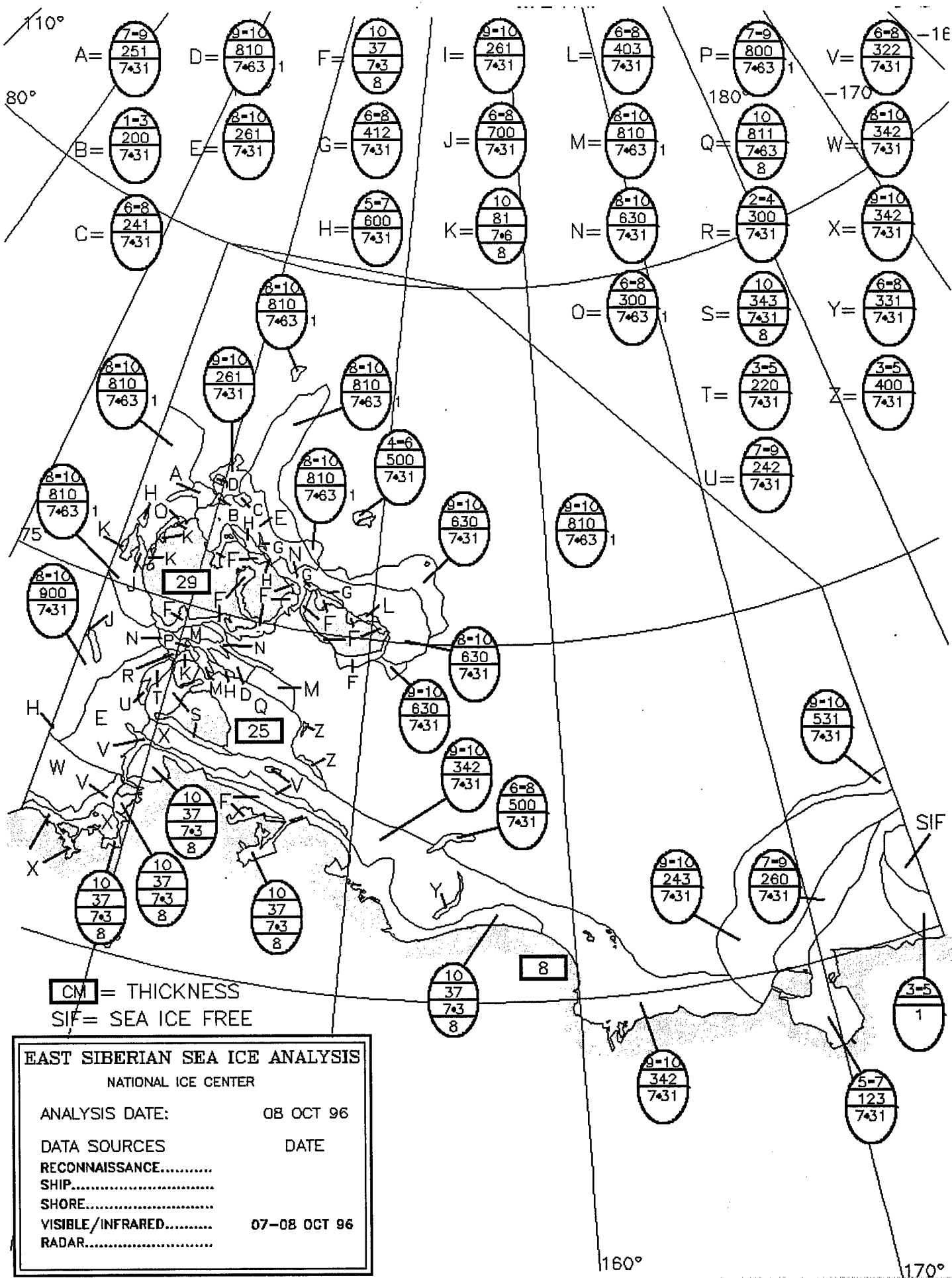


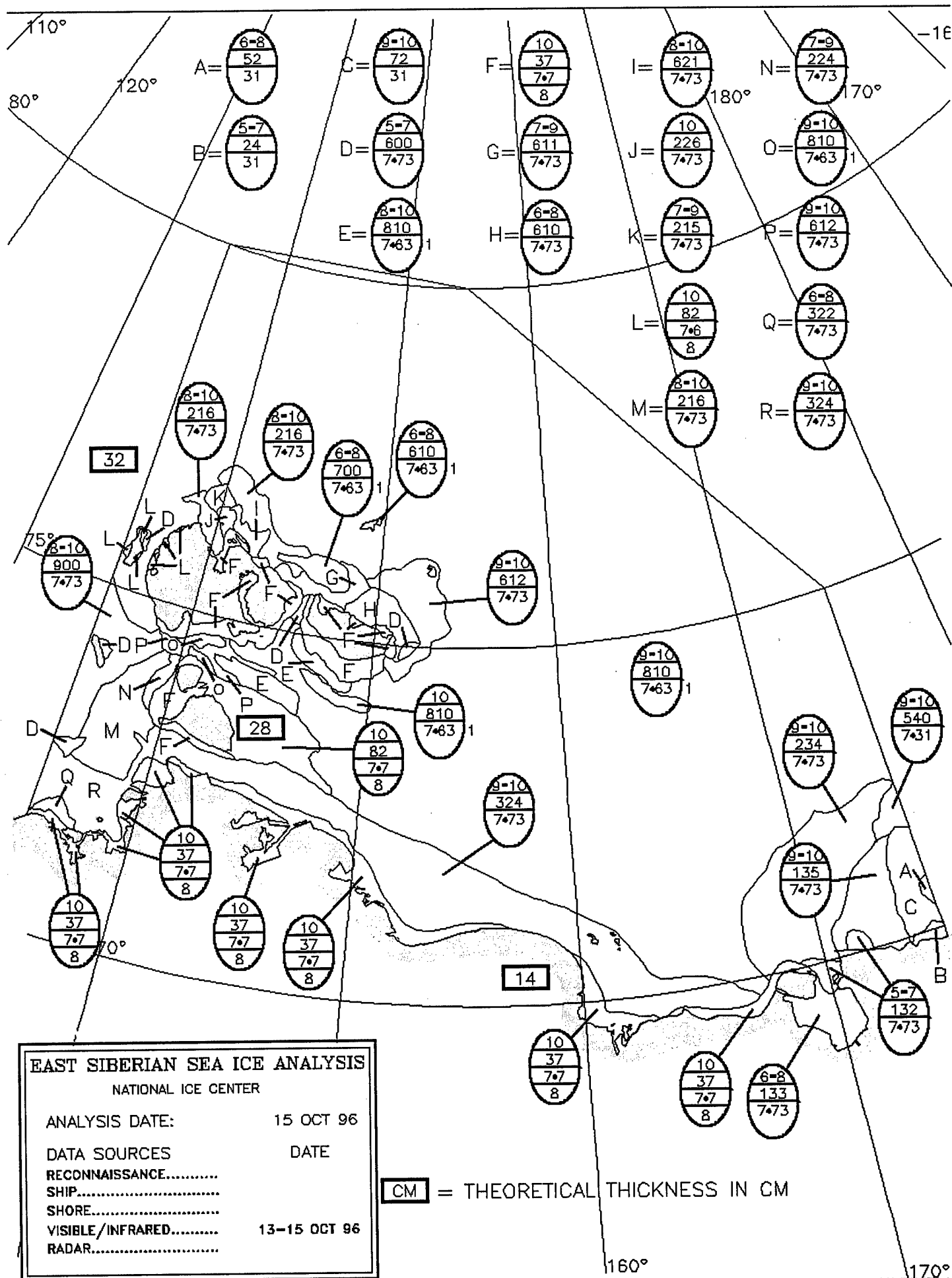


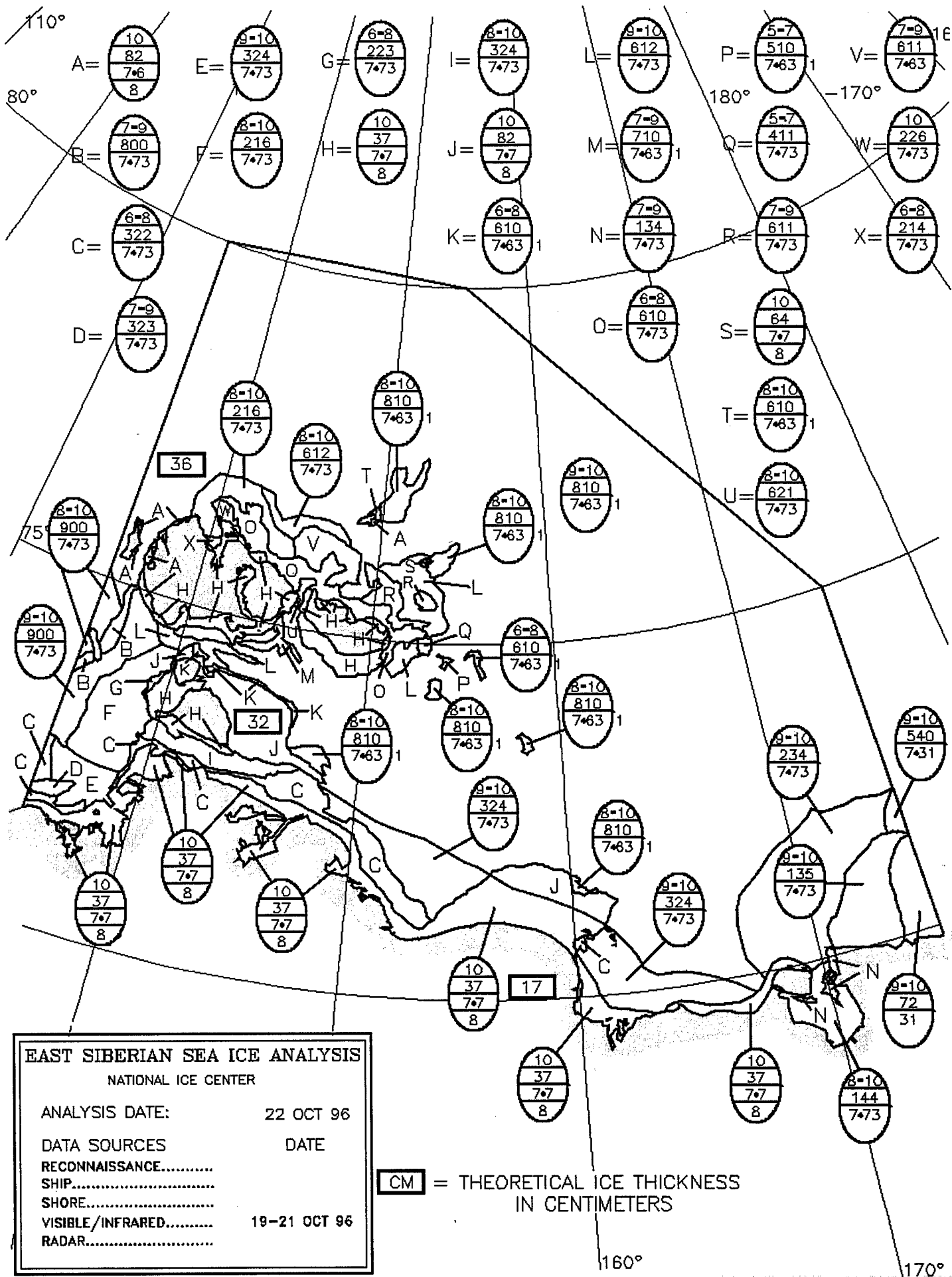


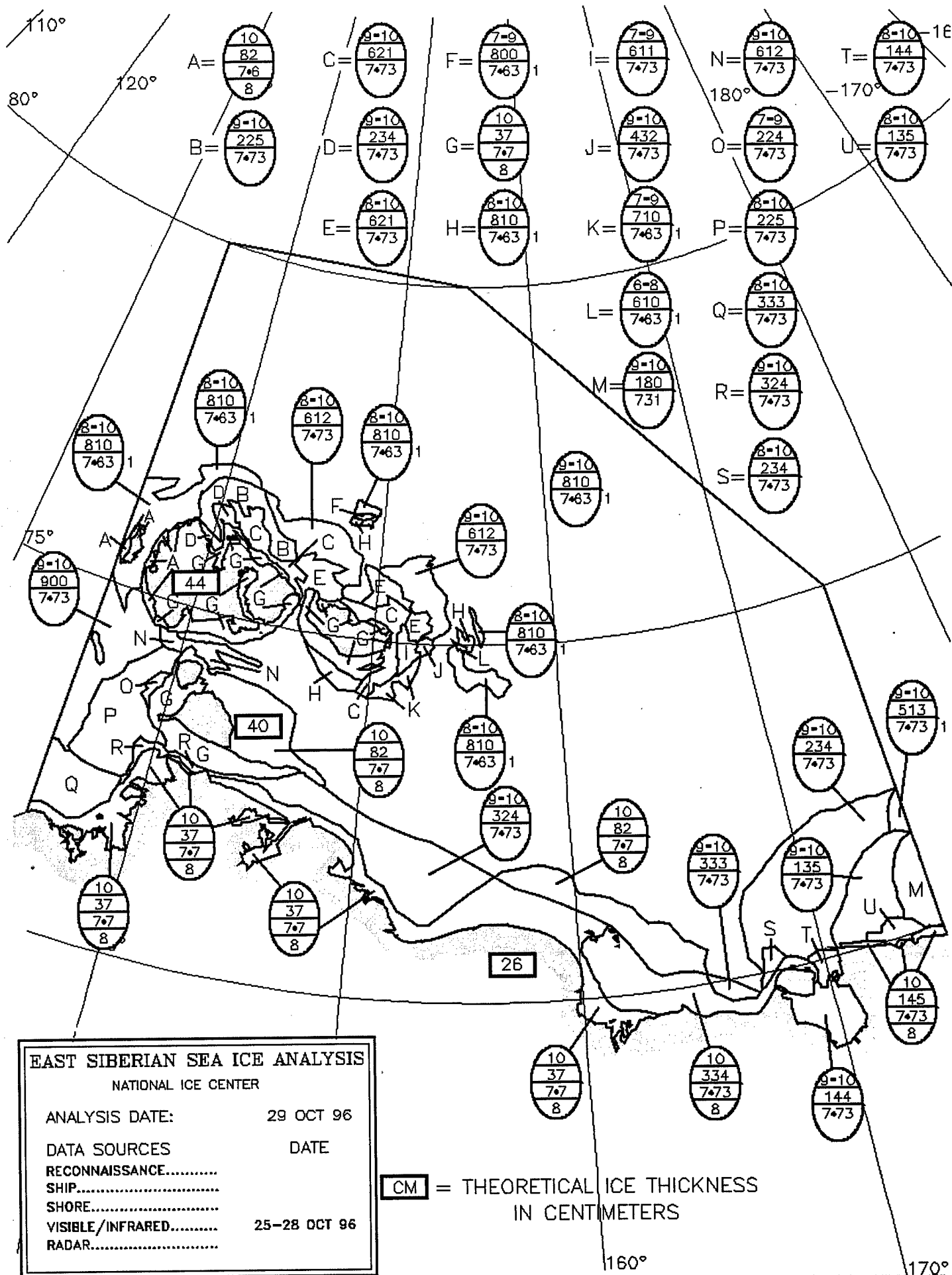


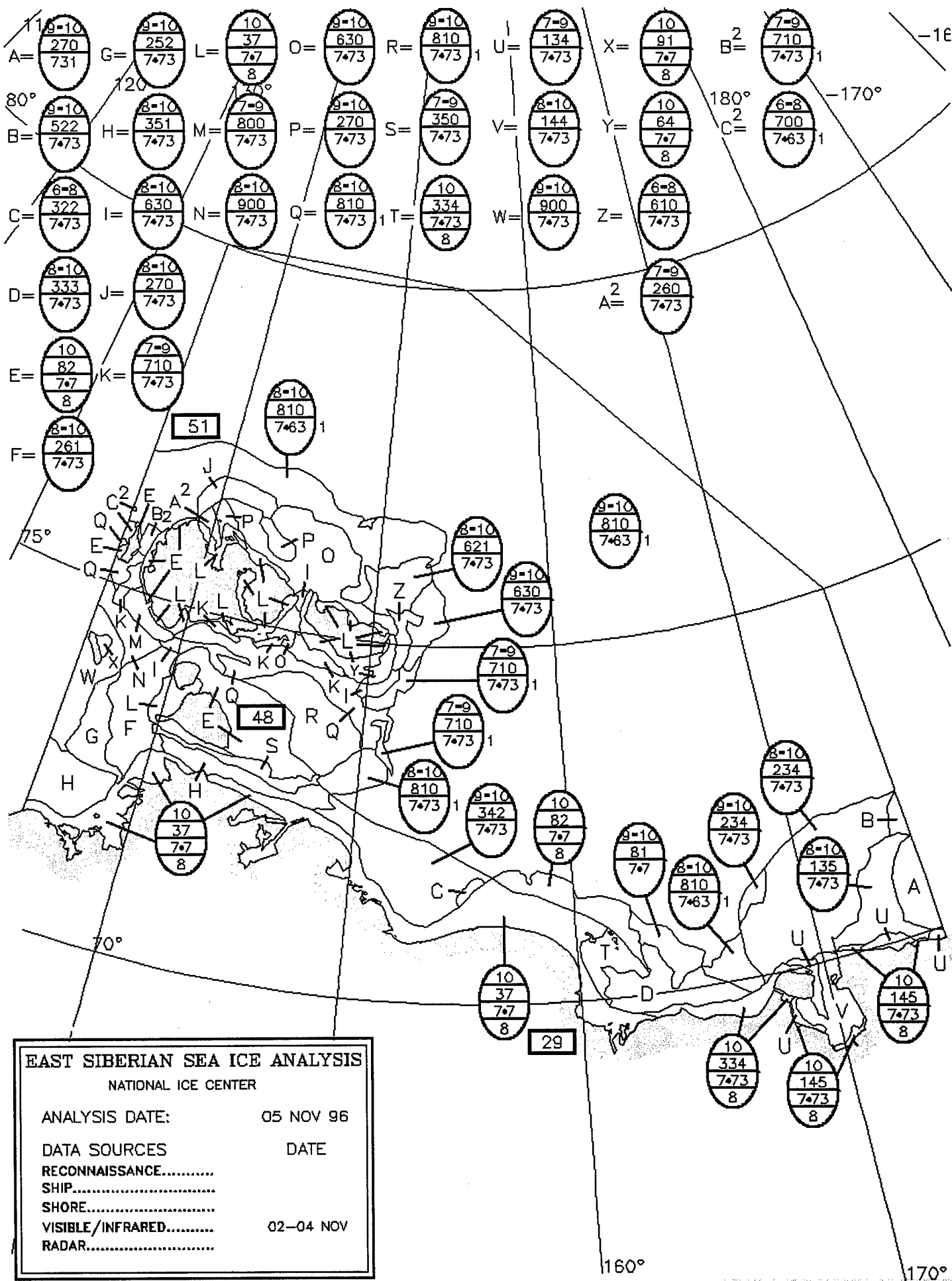


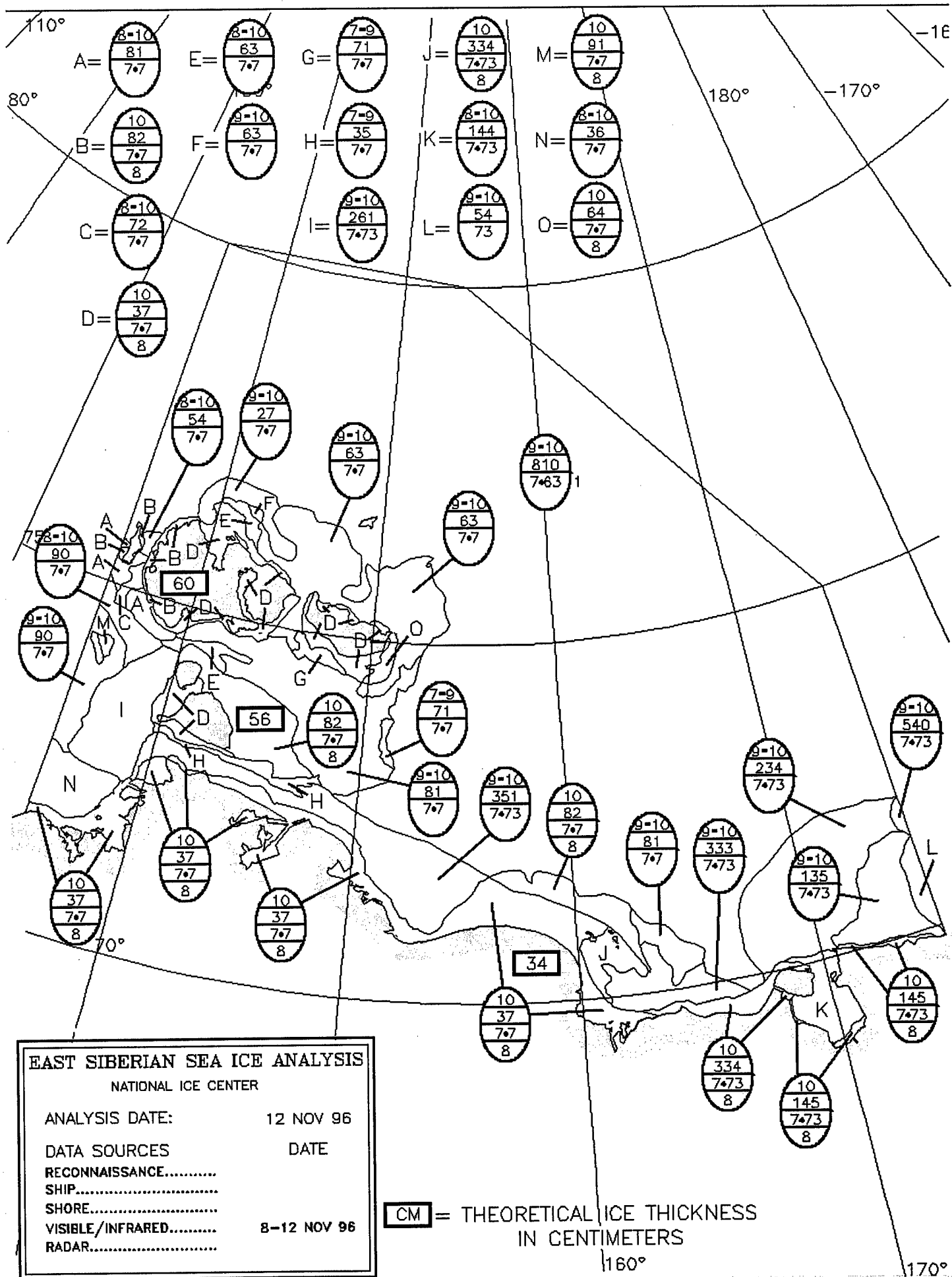


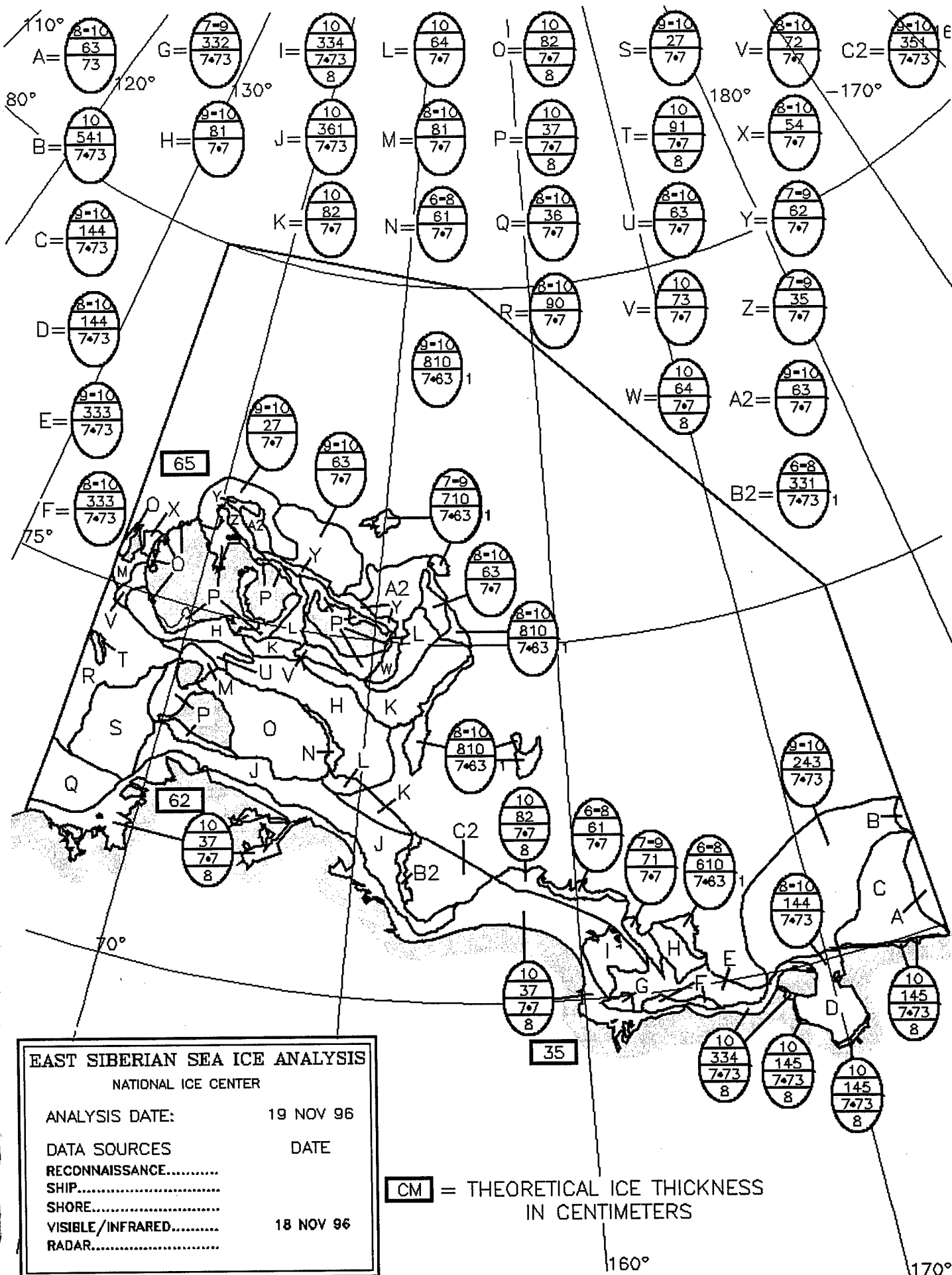


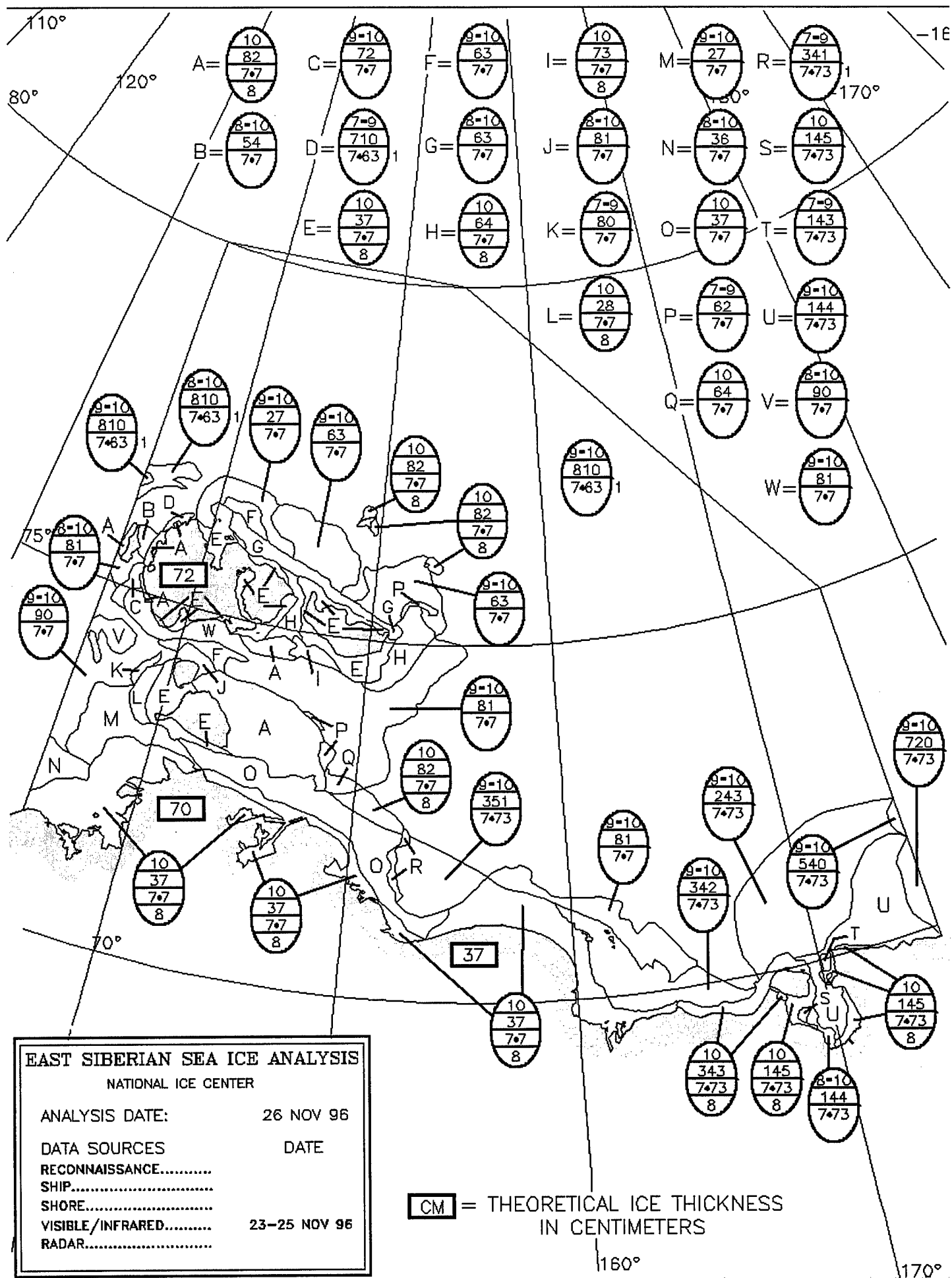


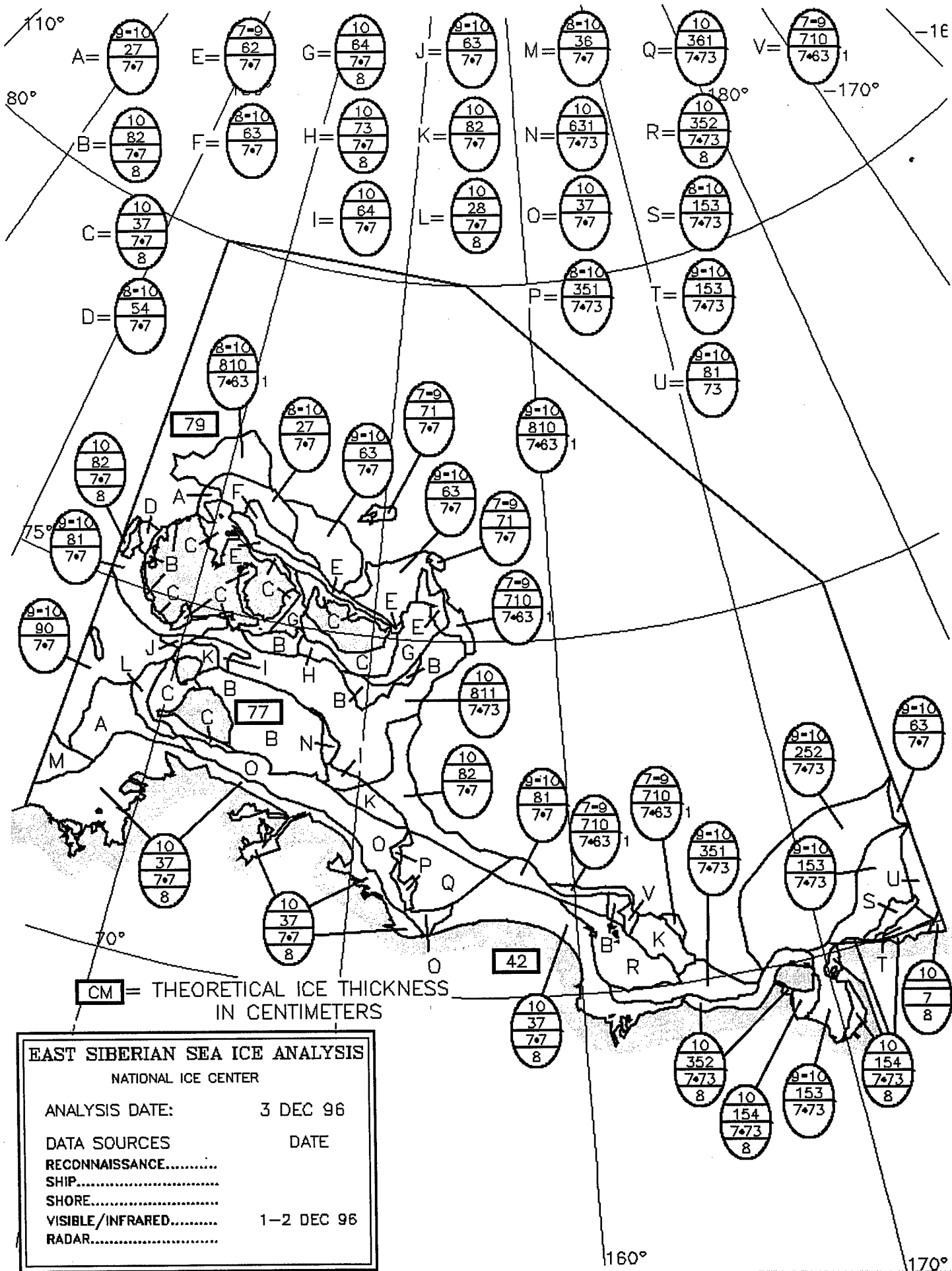


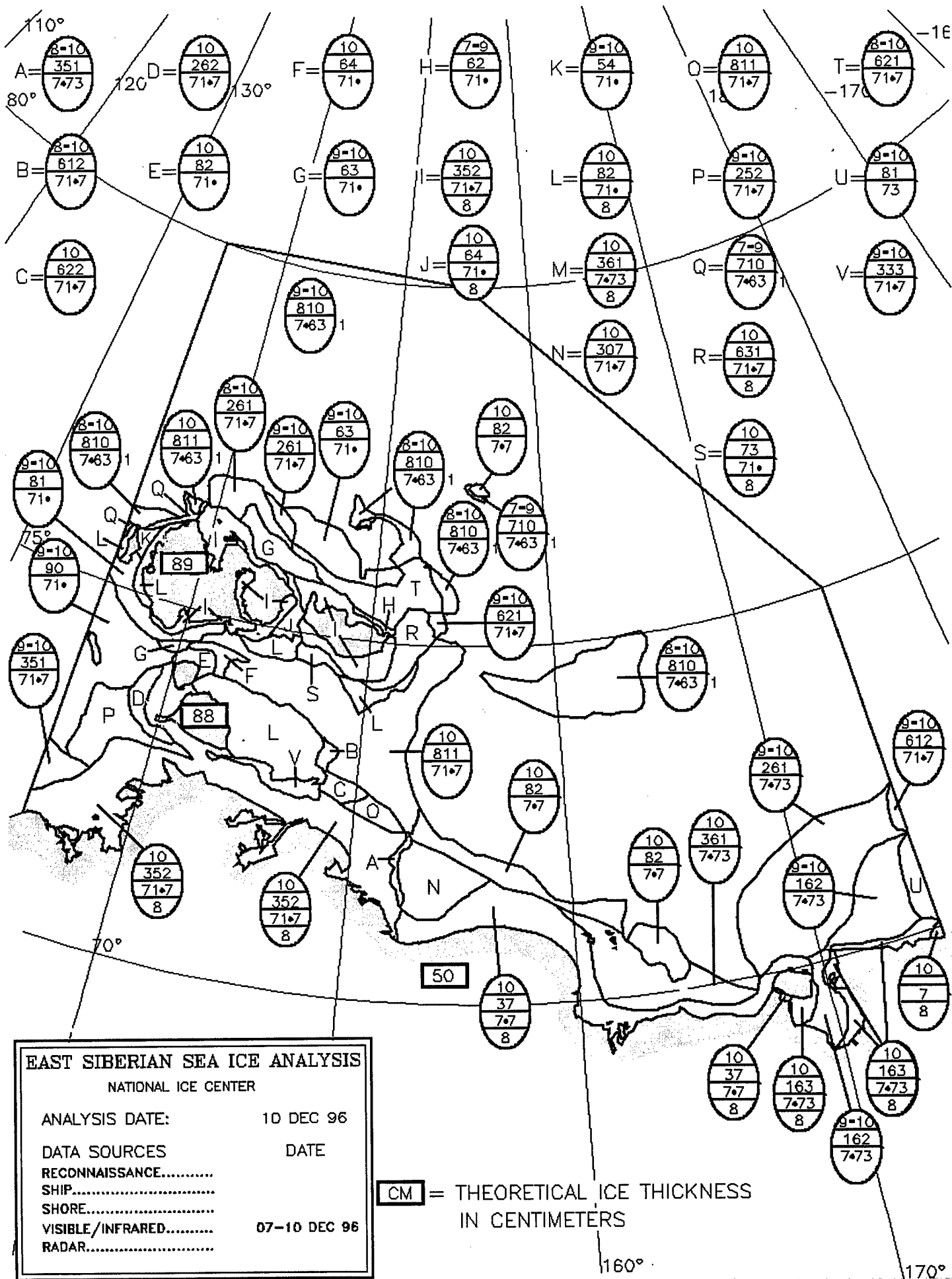


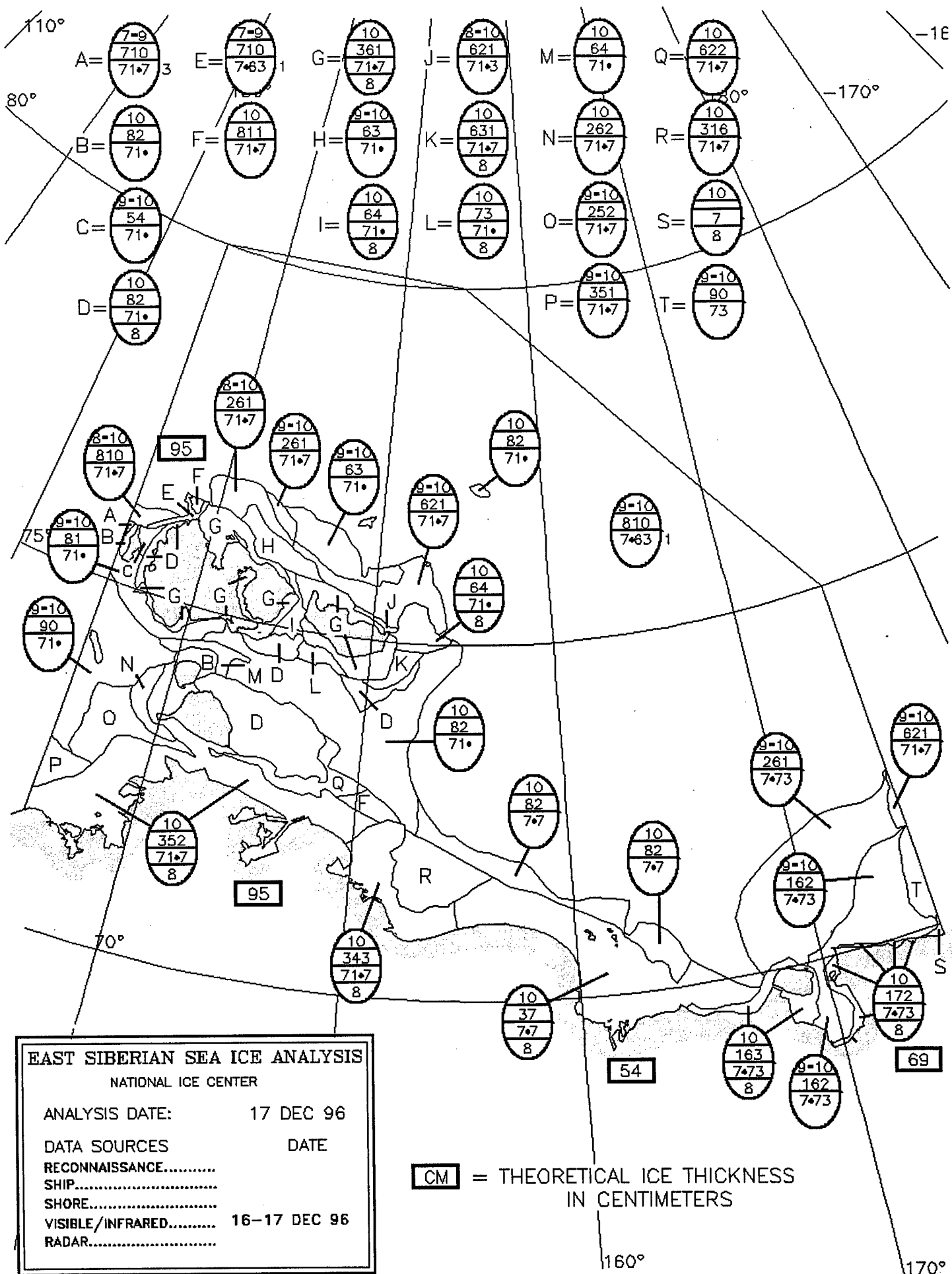


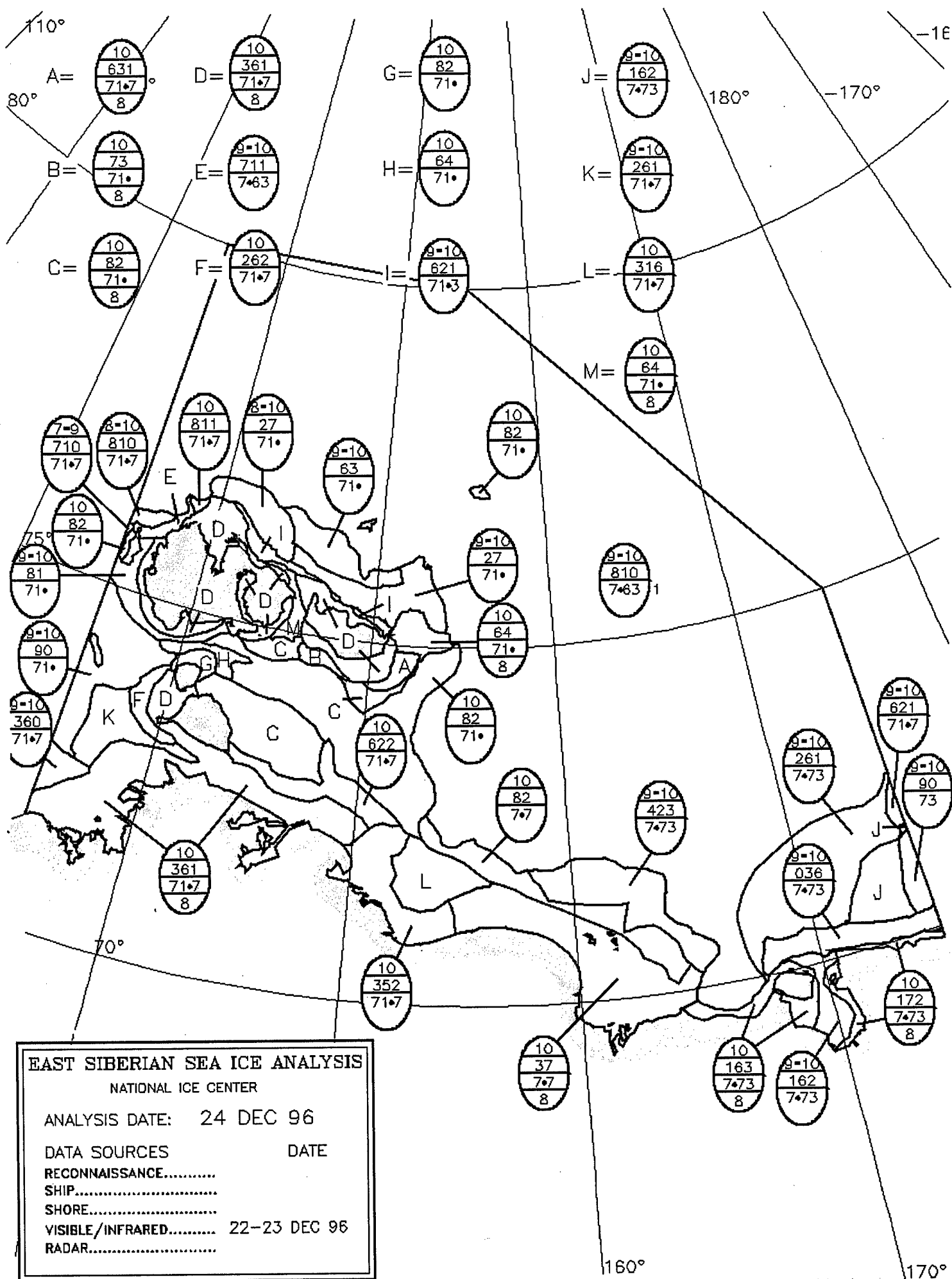


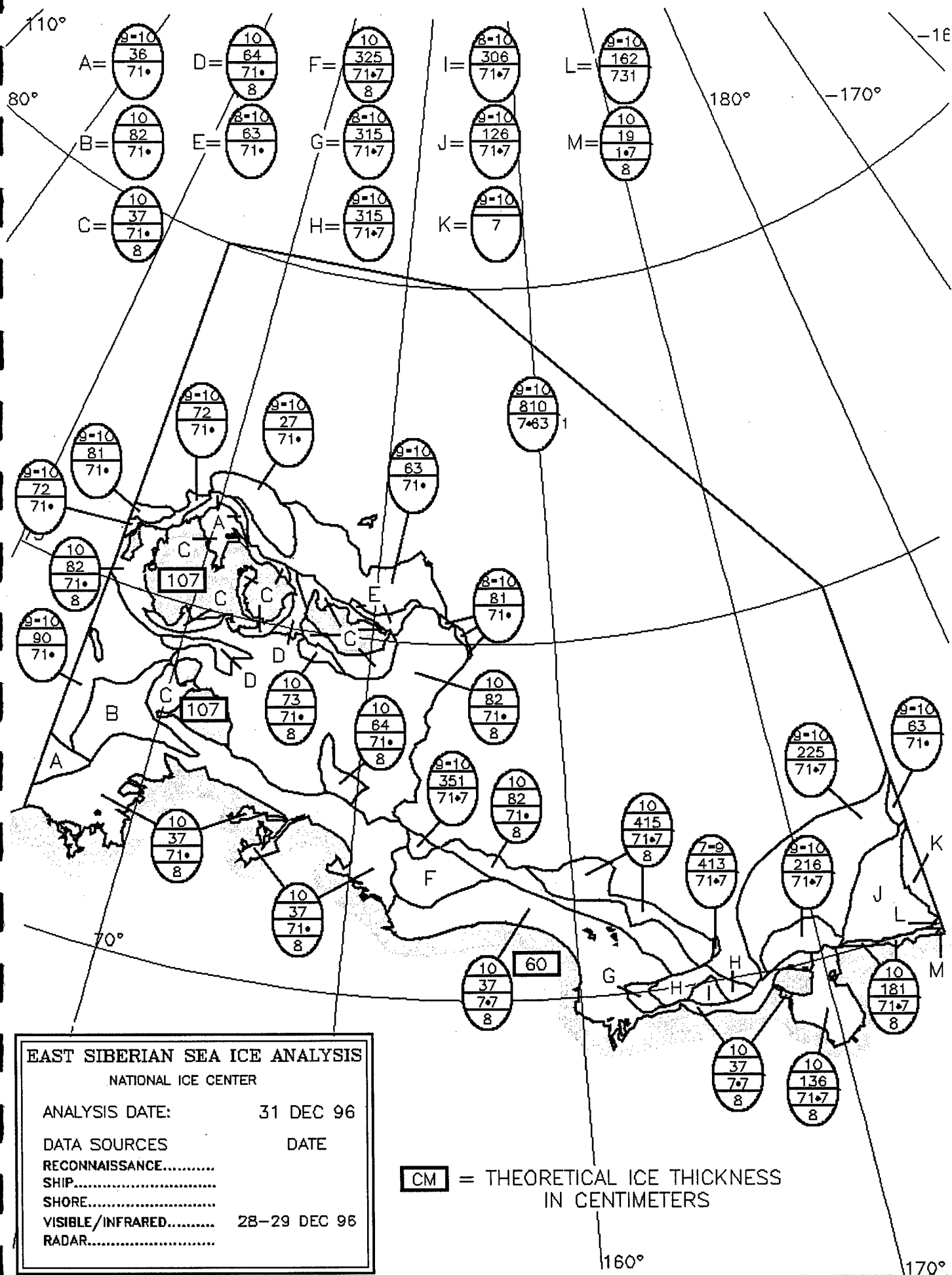












SEA OF OKHOTSK WEST ICE ANALYSIS
NATIONAL ICE CENTER

ANALYSIS DATE: 29 OCT 96

DATA SOURCES DATE

RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED.....

RADAR.....

SEA ICE FREE

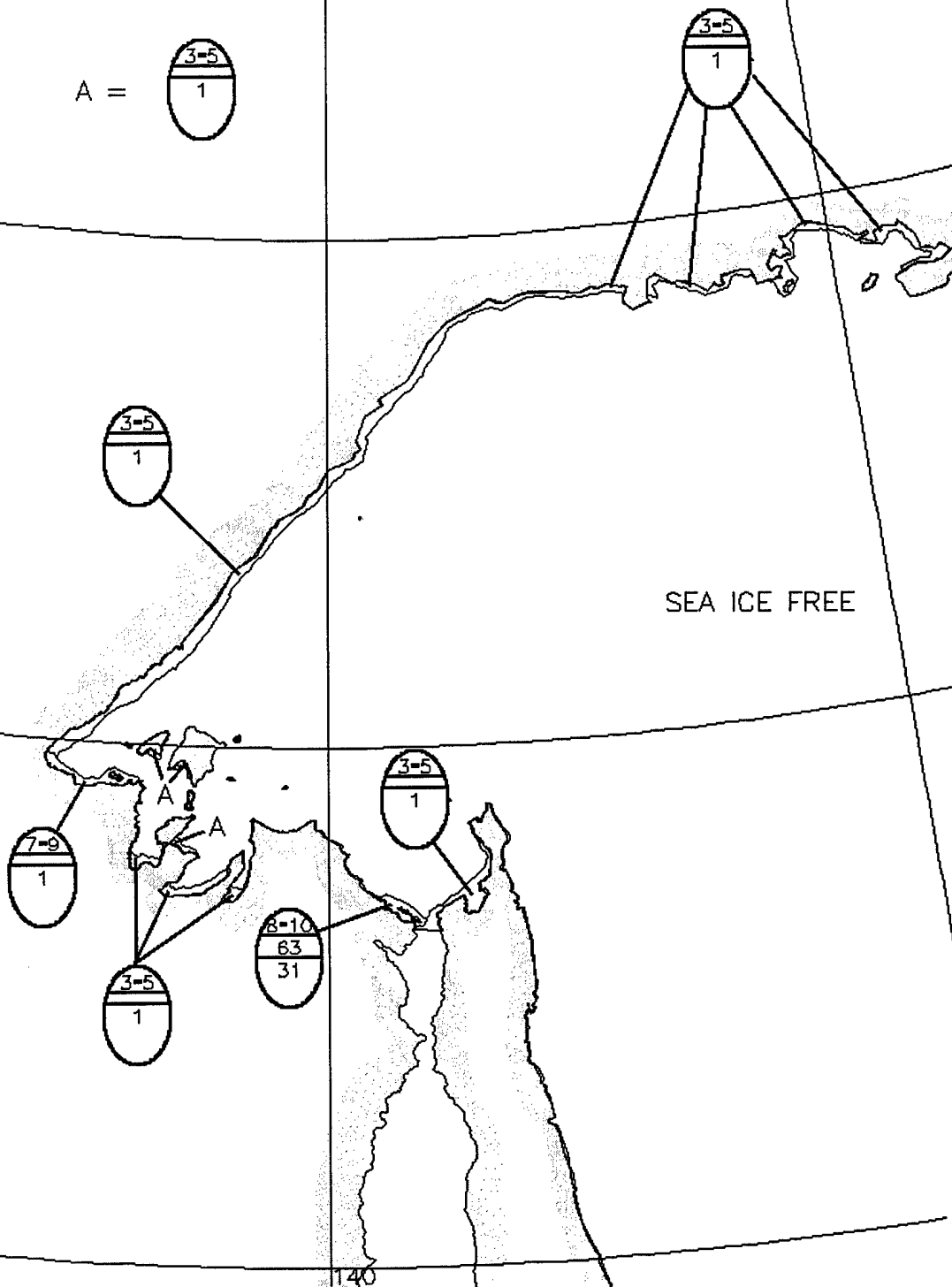
SEA OF OKHOTSK WEST ICE ANALYSIS
NATIONAL ICE CENTER

ANALYSIS DATE: 05 NOV 96
DATA SOURCES DATE
RECONNAISSANCE.....
SHIP.....
SHORE.....
VISIBLE/INFRARED..... 05 NOV 96
RADAR.....

A =



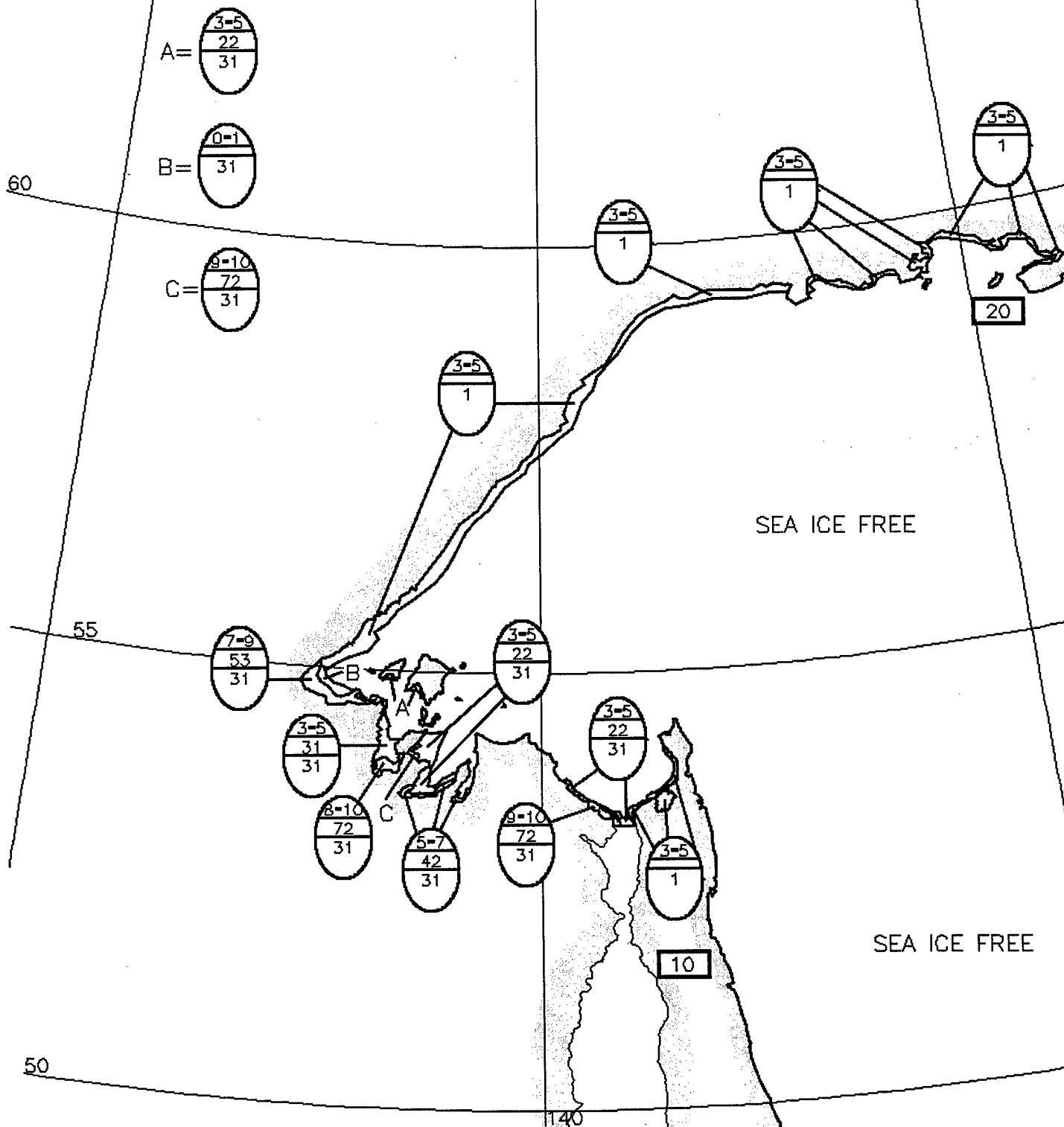
SEA ICE FREE



SEA OF OKHOTSK WEST ICE ANALYSIS NATIONAL ICE CENTER

ANALYSIS DATE: 12 NOV 96
 DATA SOURCES DATE
 RECONNAISSANCE.....
 SHIP.....
 SHORE.....
 VISIBLE/INFRARED..... 10-11 NOV 96
 RADAR.....

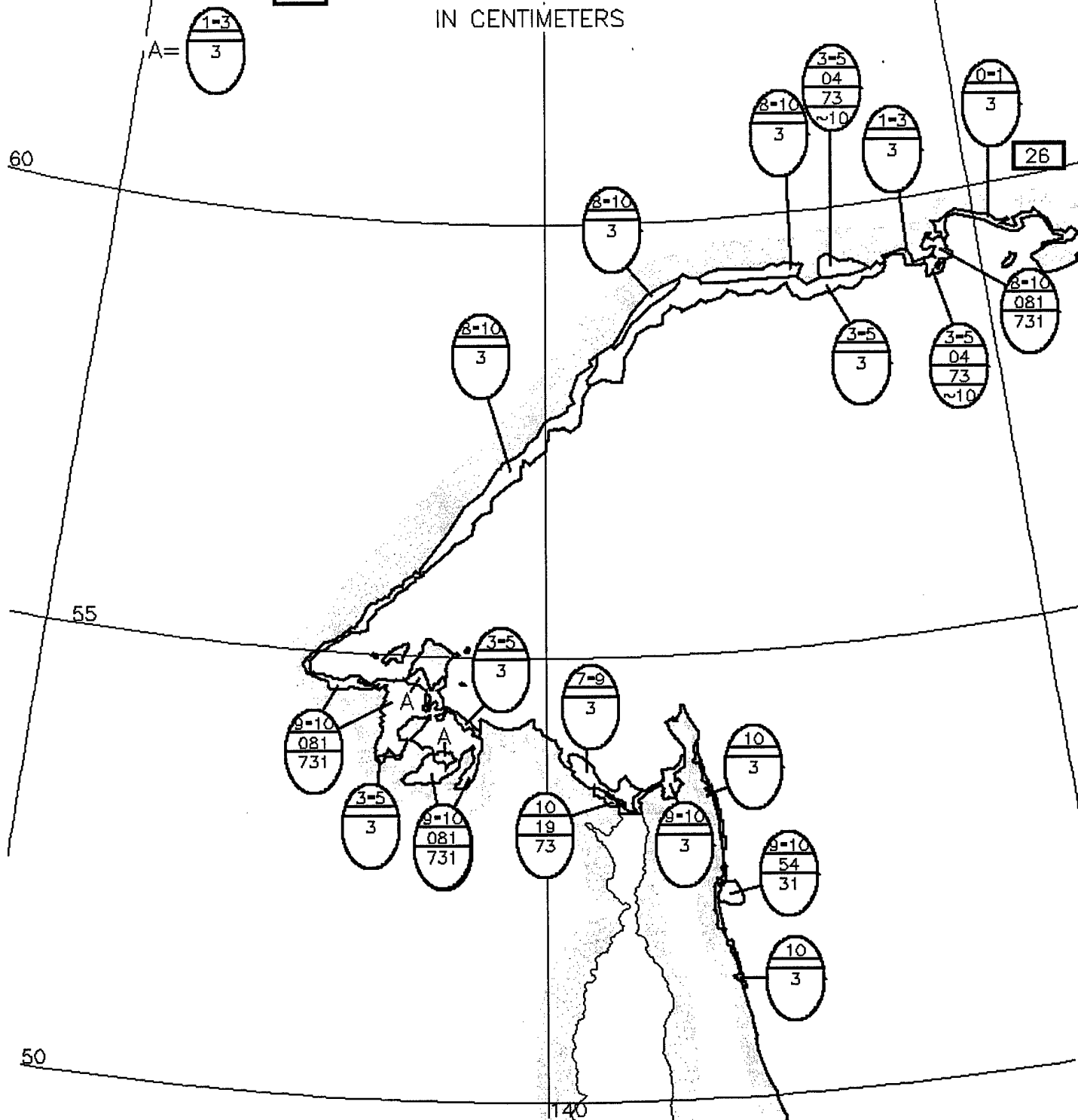
CM = THEORETICAL ICE THICKNESS
 IN CENTIMETERS



SEA OF OKHOTSK WEST ICE ANALYSIS NATIONAL ICE CENTER

ANALYSIS DATE: 19 NOV 96
DATA SOURCES DATE
RECONNAISSANCE.....
SHIP.....
SHORE.....
VISIBLE/INFRARED..... 17-18 NOV 96
RADAR.....

CM = THEORETICAL ICE THICKNESS
IN CENTIMETERS

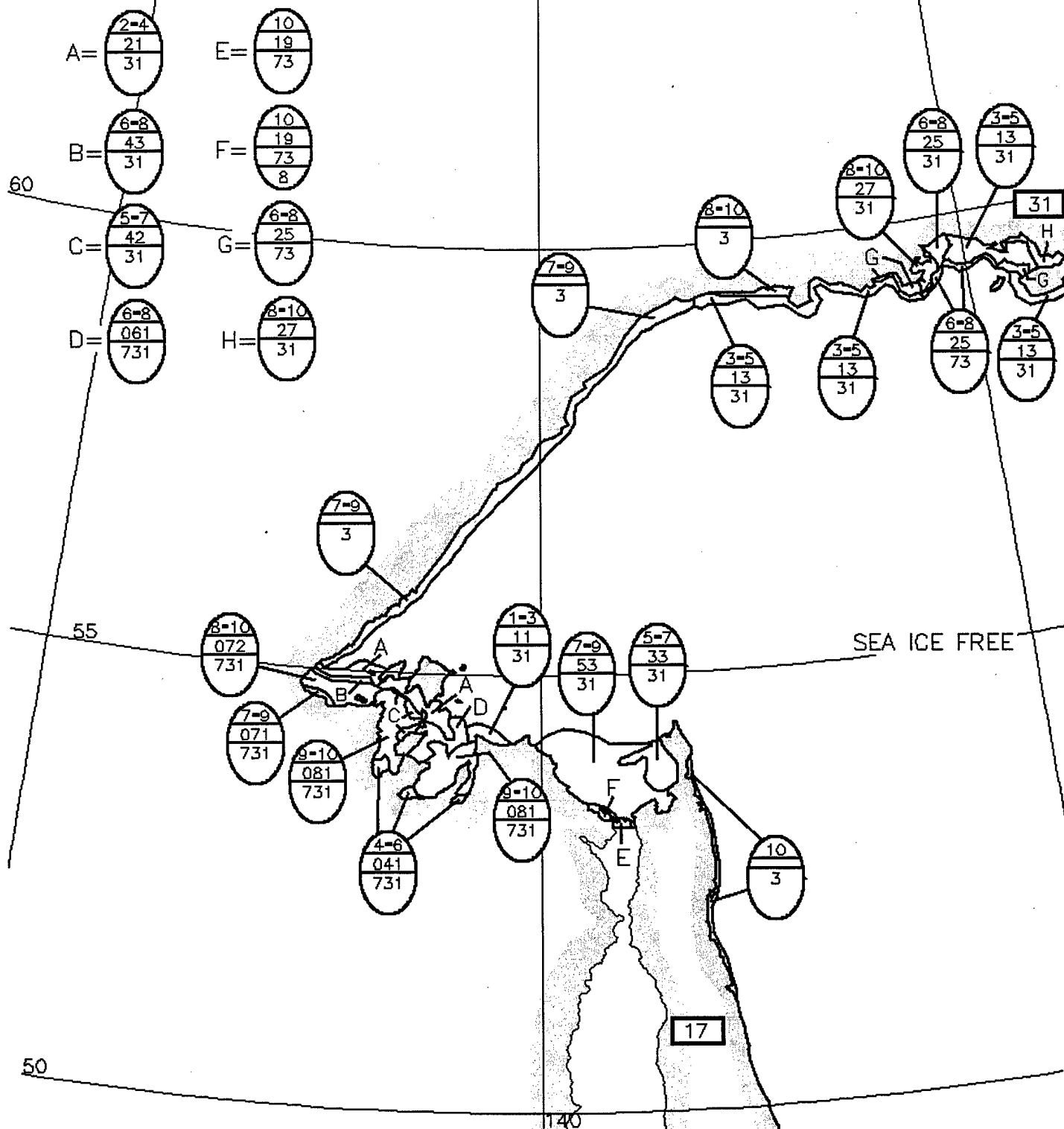


150

65

ANALYSIS DATE: 26 NOV 96
DATA SOURCES DATE
RECONNAISSANCE.....
SHIP.....
SHORE.....
VISIBLE/INFRARED..... 22-26 NOV 96
RADAR.....

CM = THEORETICAL ICE THICKNESS
IN CENTIMETERS



ANALYSIS DATE:	3 DEC 96
DATA SOURCES	DATE
RECONNAISSANCE.....	
SHIP.....	
SHORE.....	
VISIBLE/INFRARED.....	1-3 DEC 96
RADAR.....	

[illegible]

ANALYSIS DATE: 10 DEC 96
DATA SOURCES DATE
RECONNAISSANCE.....
SHIP.....
SHORE.....
VISIBLE/INFRARED..... 07-10 DEC 96
RADAR.....

$$A = \begin{pmatrix} 10 \\ 073 \\ 731 \\ 8 \end{pmatrix}$$
$$-B = \begin{pmatrix} 10 \\ 19 \\ 73 \\ 8 \end{pmatrix}$$
$$C = \frac{252}{731}$$
$$D = \begin{pmatrix} 7 & 9 \\ 161 & \\ 731 & \end{pmatrix}$$

$$\begin{array}{r} 9=10 \\ 261 \\ \hline 731 \end{array}$$


7-9
341
731
~10

7-9
161
731

9-10
180
731

9-10
180
731

10
19
73
8



10
19
73

7-9
62
31
~10

9-10
441
731

10
37
73
8

$$\begin{array}{r} 9-10 \\ \hline 351 \\ \hline 731 \end{array}$$

EA ICE FREE

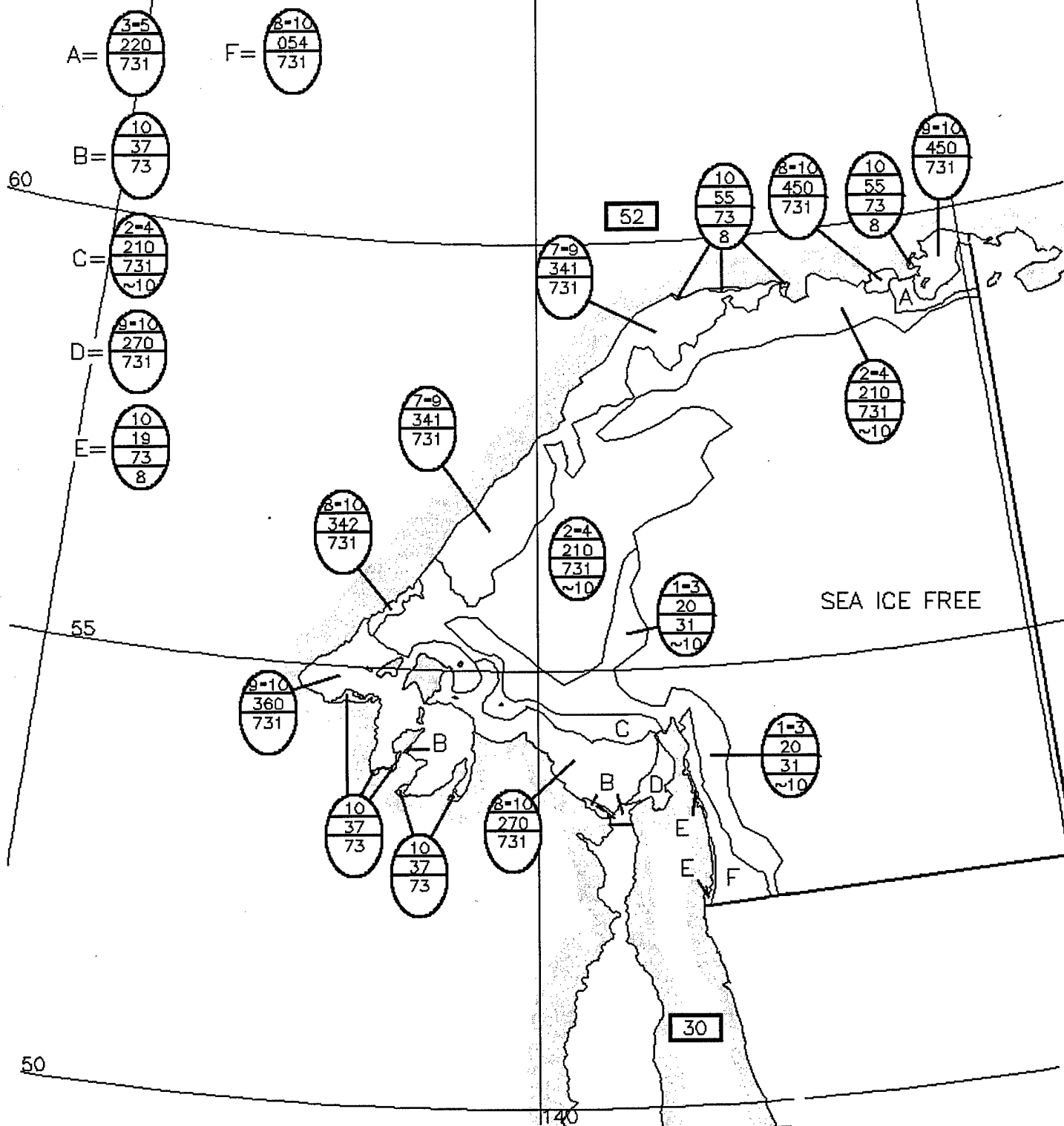
SEA ICE FREE

26

SEA OF OKHOTSK WEST ICE ANALYSIS NATIONAL ICE CENTER

ANALYSIS DATE: 17 DEC 96
 DATA SOURCES DATE
 RECONNAISSANCE.....
 SHIP.....
 SHORE.....
 VISIBLE/INFRARED..... 13-16 DEC 96
 RADAR.....

CM = THEORETICAL ICE THICKNESS
IN CENTIMETERS



SEA OF OKHOTSK WEST ICE ANALYSIS NATIONAL ICE CENTER

ANALYSIS DATE: 24 DEC 96

DATA SOURCES DATE

RECONNAISSANCE.....

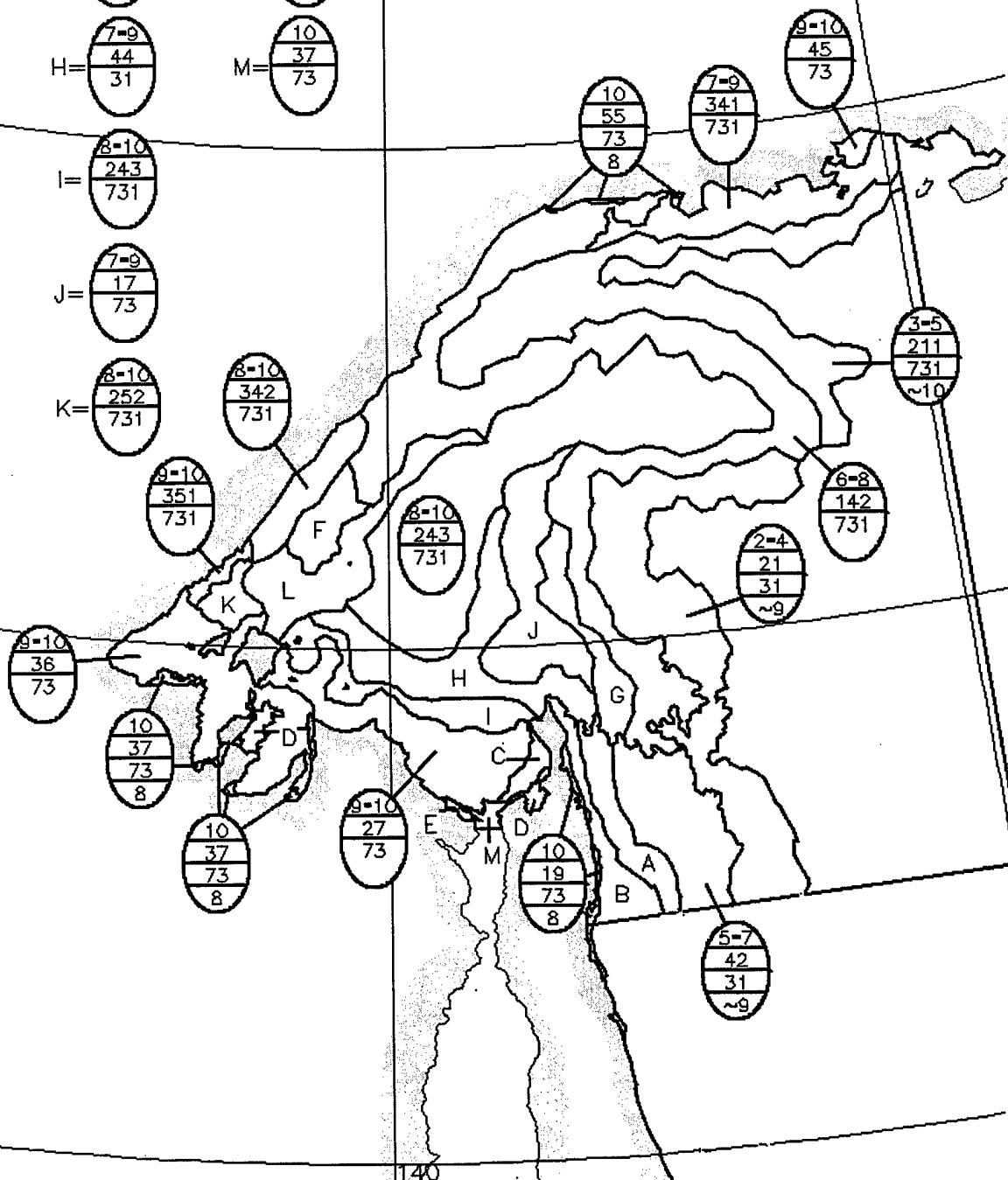
SHIP.....

SHORE.....

VISIBLE/INFRARED..... 22-23 DEC 96

RADAR.....

A=	$\frac{7-9}{53}$ $\frac{31}{\sim 10}$	G=	$\frac{7-9}{161}$ $\frac{731}{731}$	L=	$\frac{9-10}{252}$ $\frac{731}{731}$
B=	$\frac{9-10}{153}$ $\frac{731}{731}$	H=	$\frac{7-9}{44}$ $\frac{31}{31}$	M=	$\frac{10}{37}$ $\frac{73}{73}$
C=	$\frac{9-10}{27}$ $\frac{73}{73}$	I=	$\frac{8-10}{243}$ $\frac{731}{731}$		
D=	$\frac{10}{3}$ $\frac{8}{8}$	J=	$\frac{7-9}{17}$ $\frac{73}{73}$		
E=	$\frac{10}{37}$ $\frac{73}{73}$ $\frac{8}{8}$	K=	$\frac{8-10}{252}$ $\frac{731}{731}$		
F=	$\frac{7-9}{341}$ $\frac{731}{731}$				



SEA OF OKHOTSK WEST ICE ANALYSIS NATIONAL ICE CENTER

ANALYSIS DATE: 31 DEC 96

DATA SOURCES DATE

RECONNAISSANCE.....

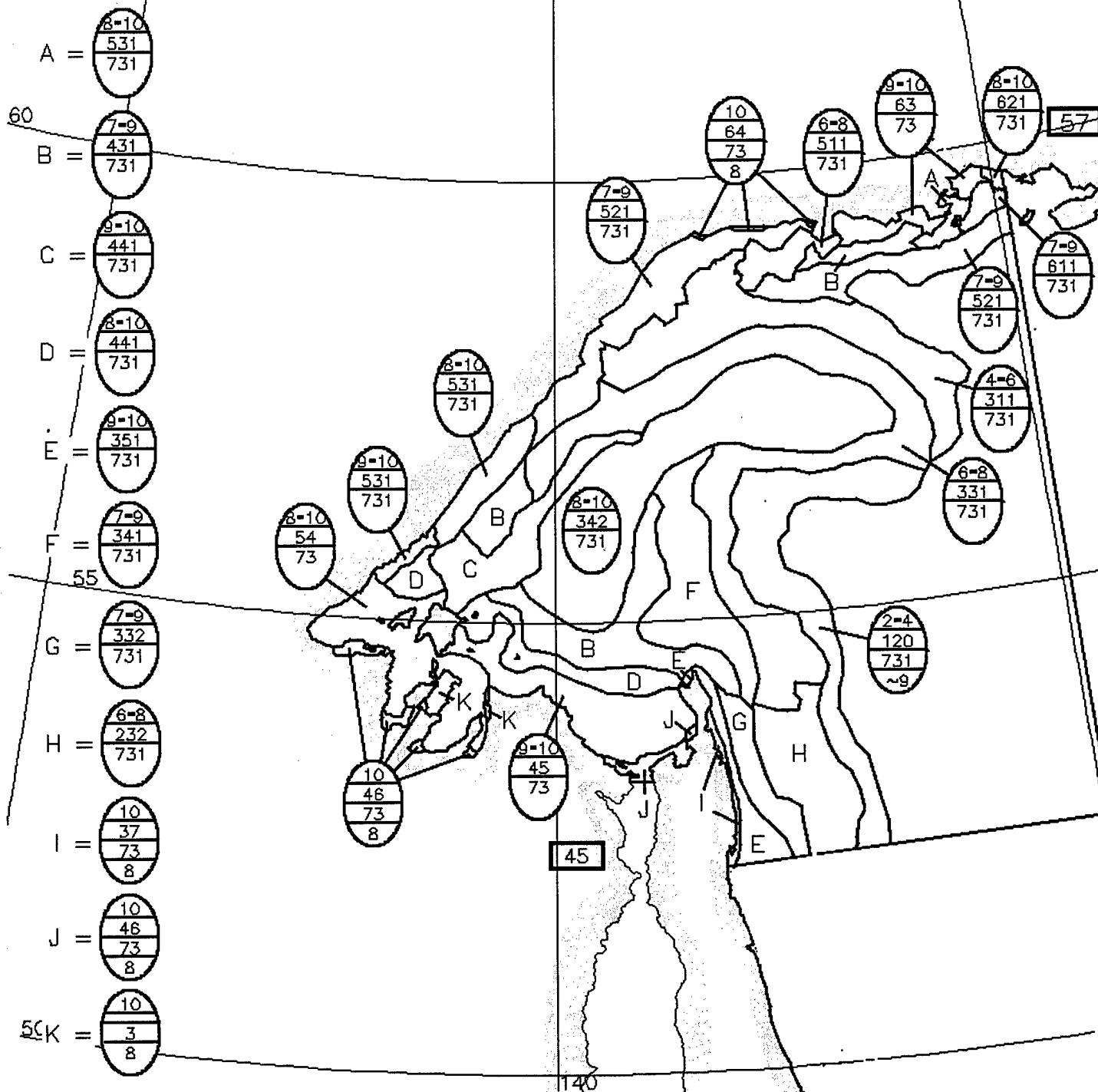
SHIP.....

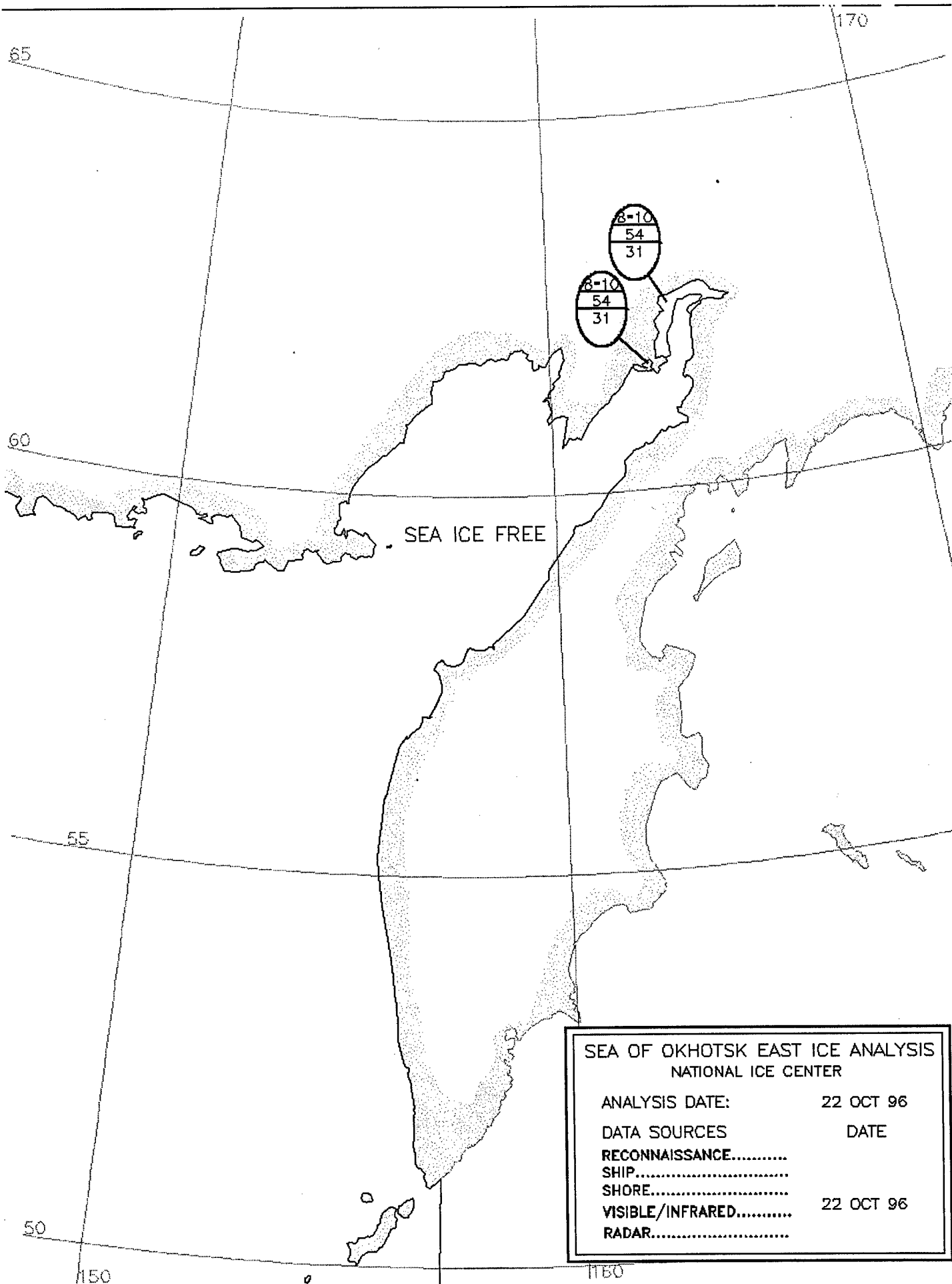
SHORE.....

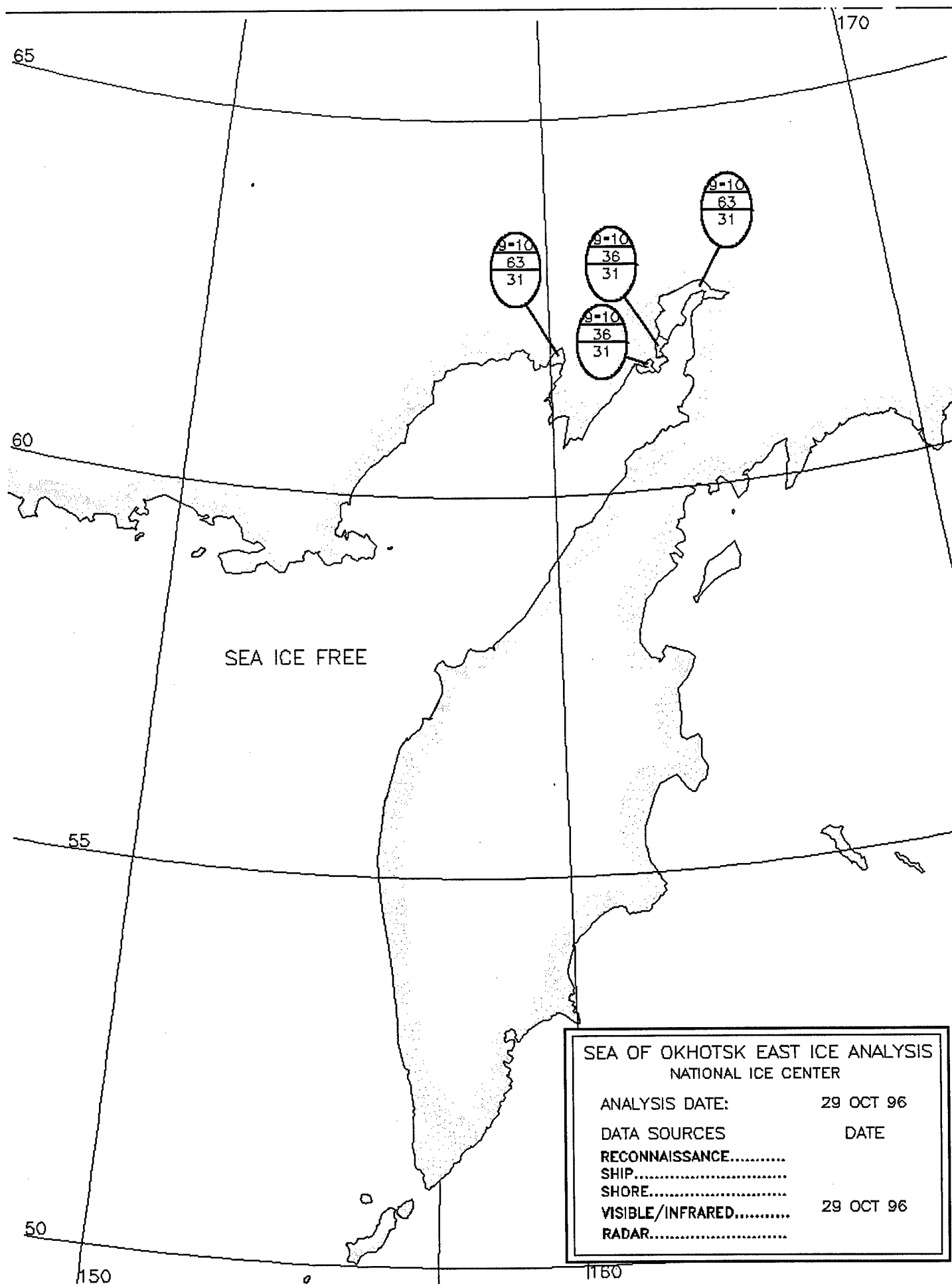
VISIBLE/INFRARED.....

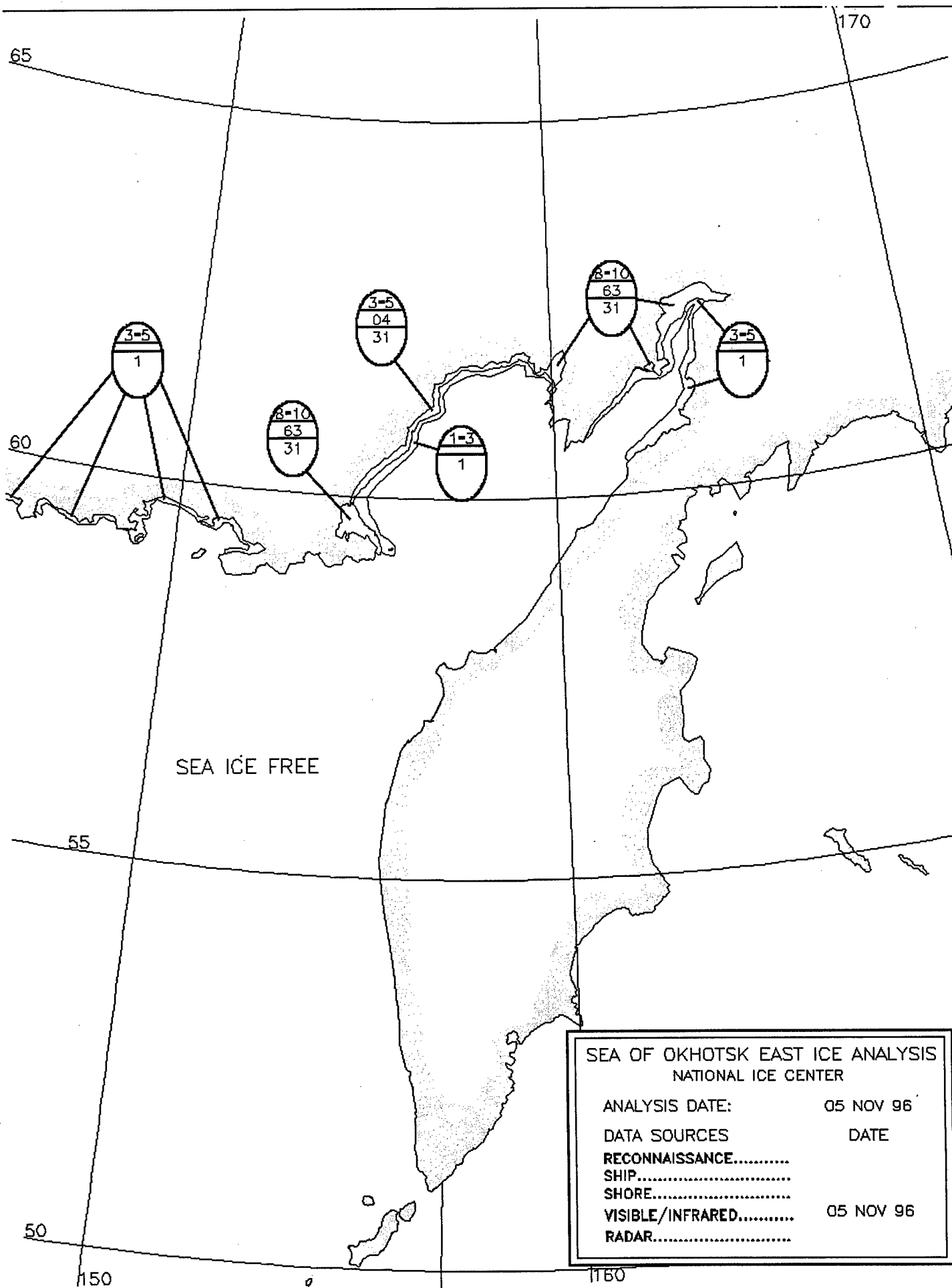
RADAR.....

CM = THEORETICAL ICE THICKNESS
IN CENTIMETERS



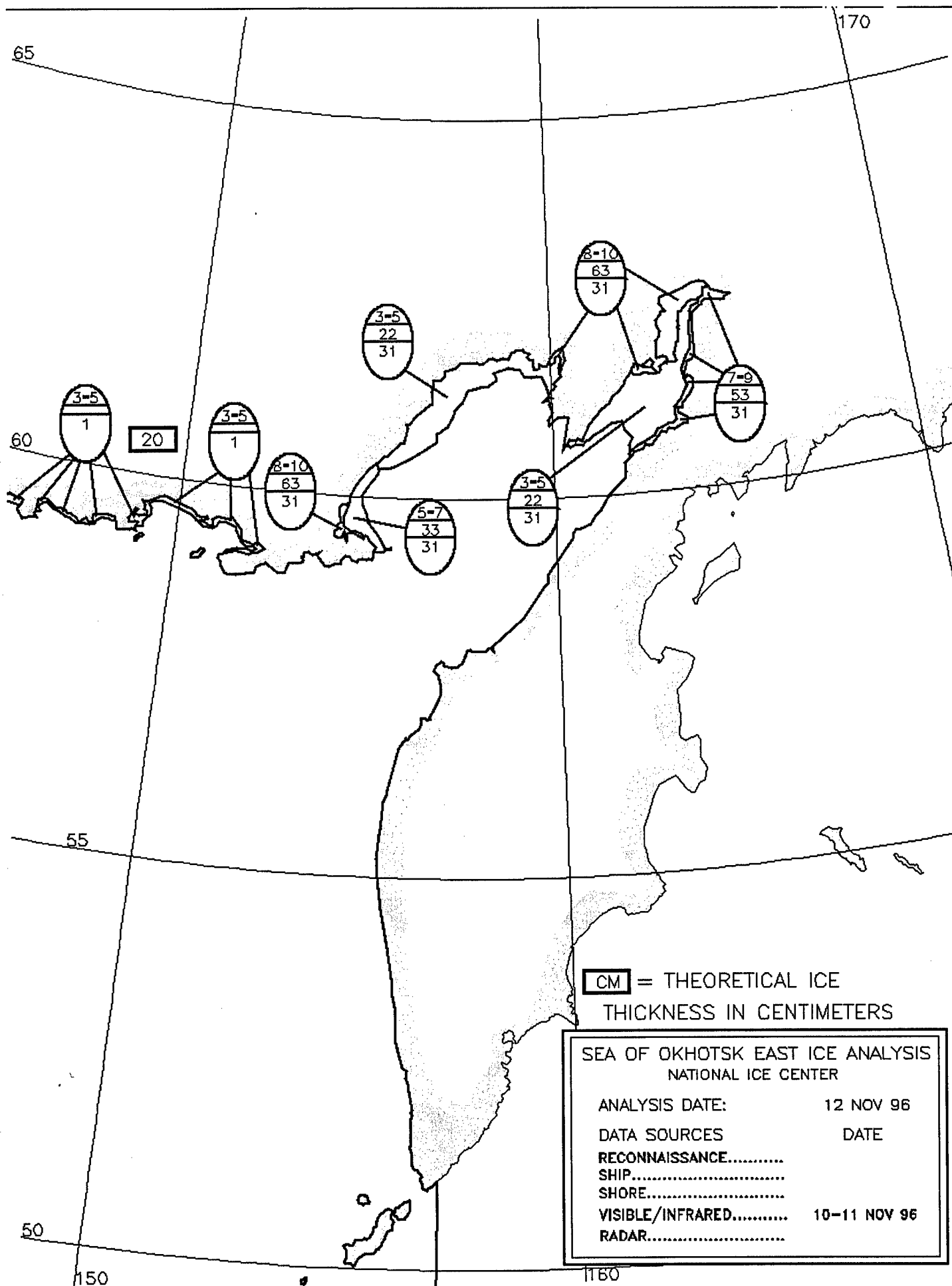


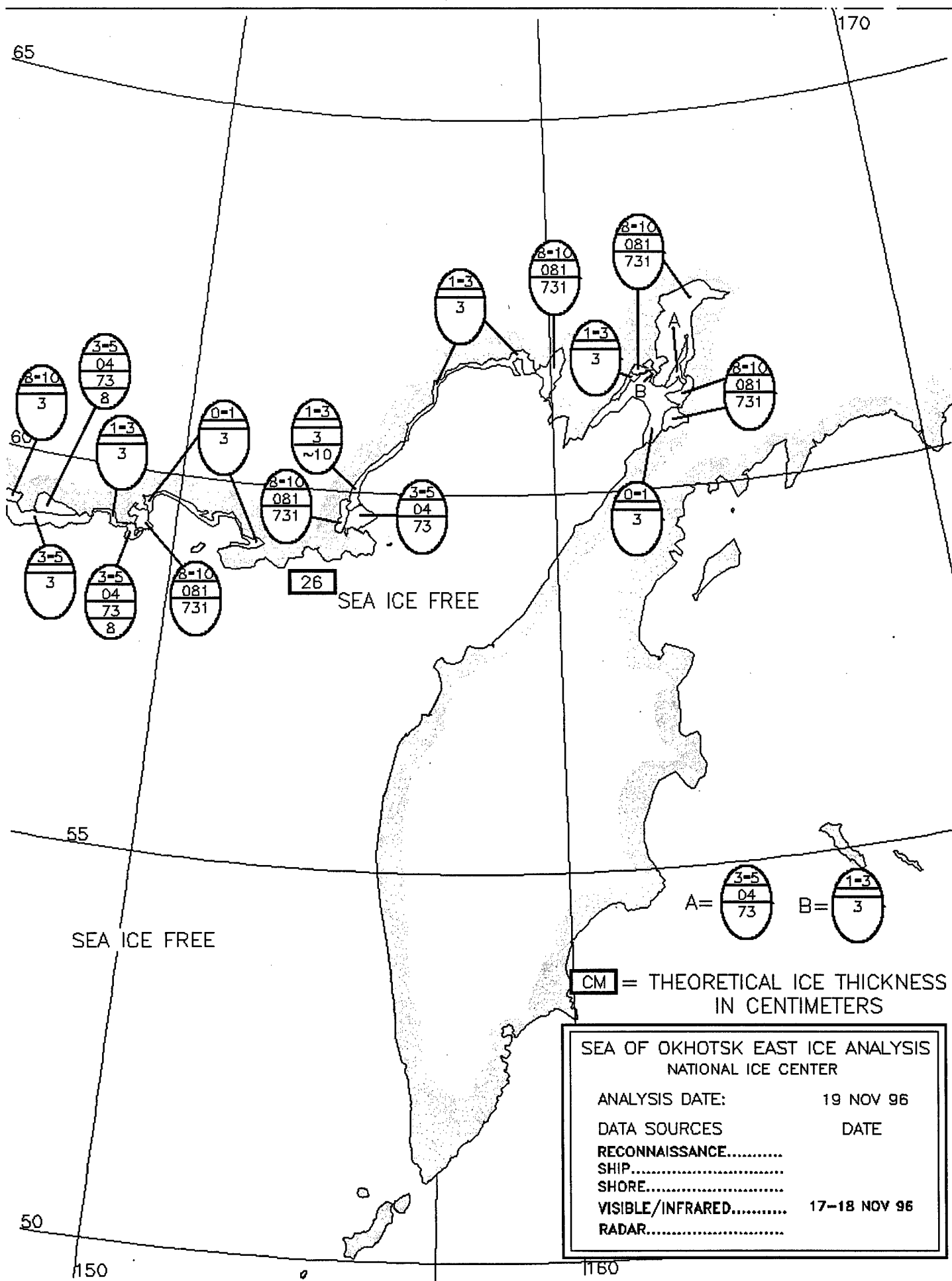


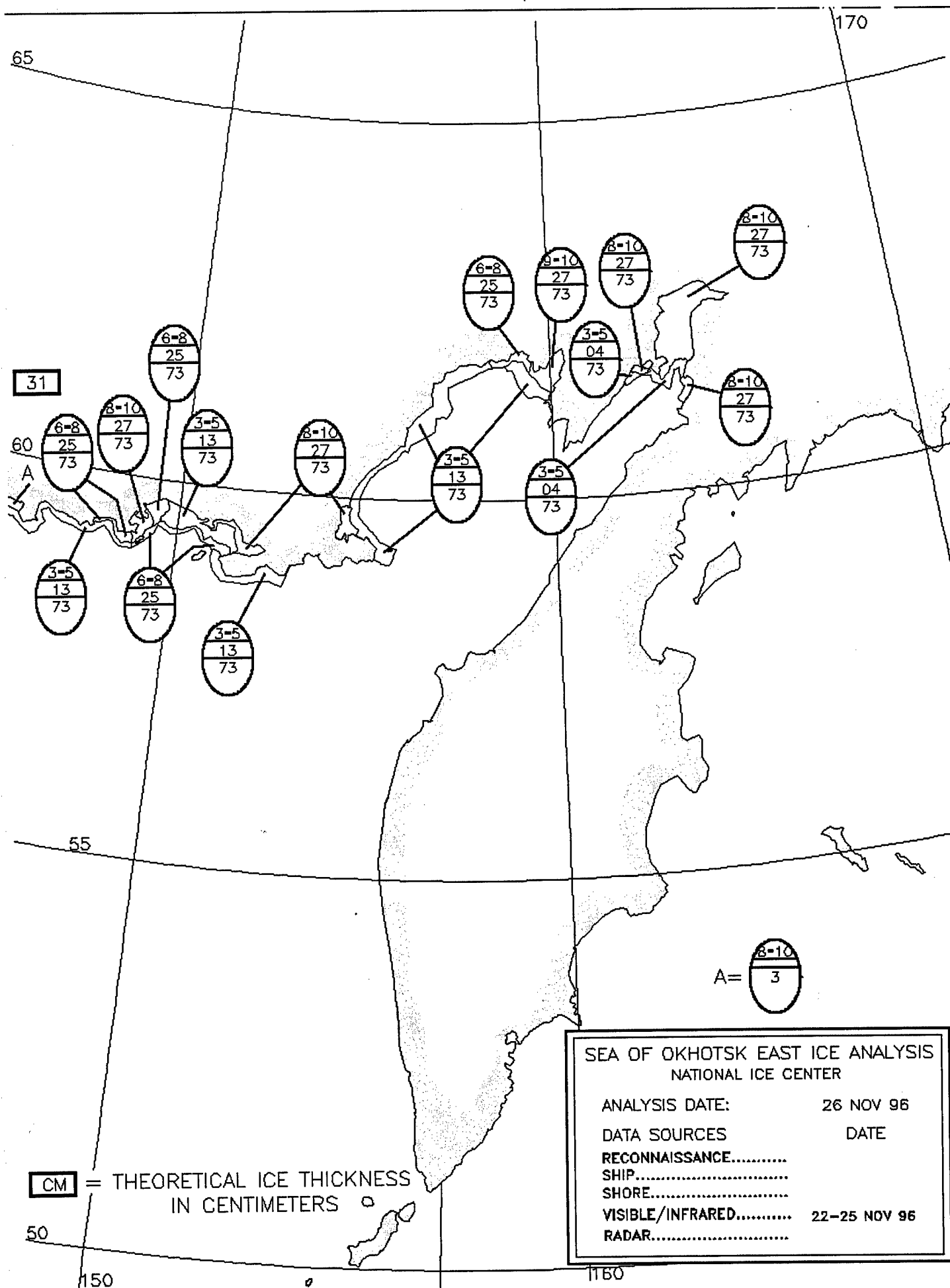


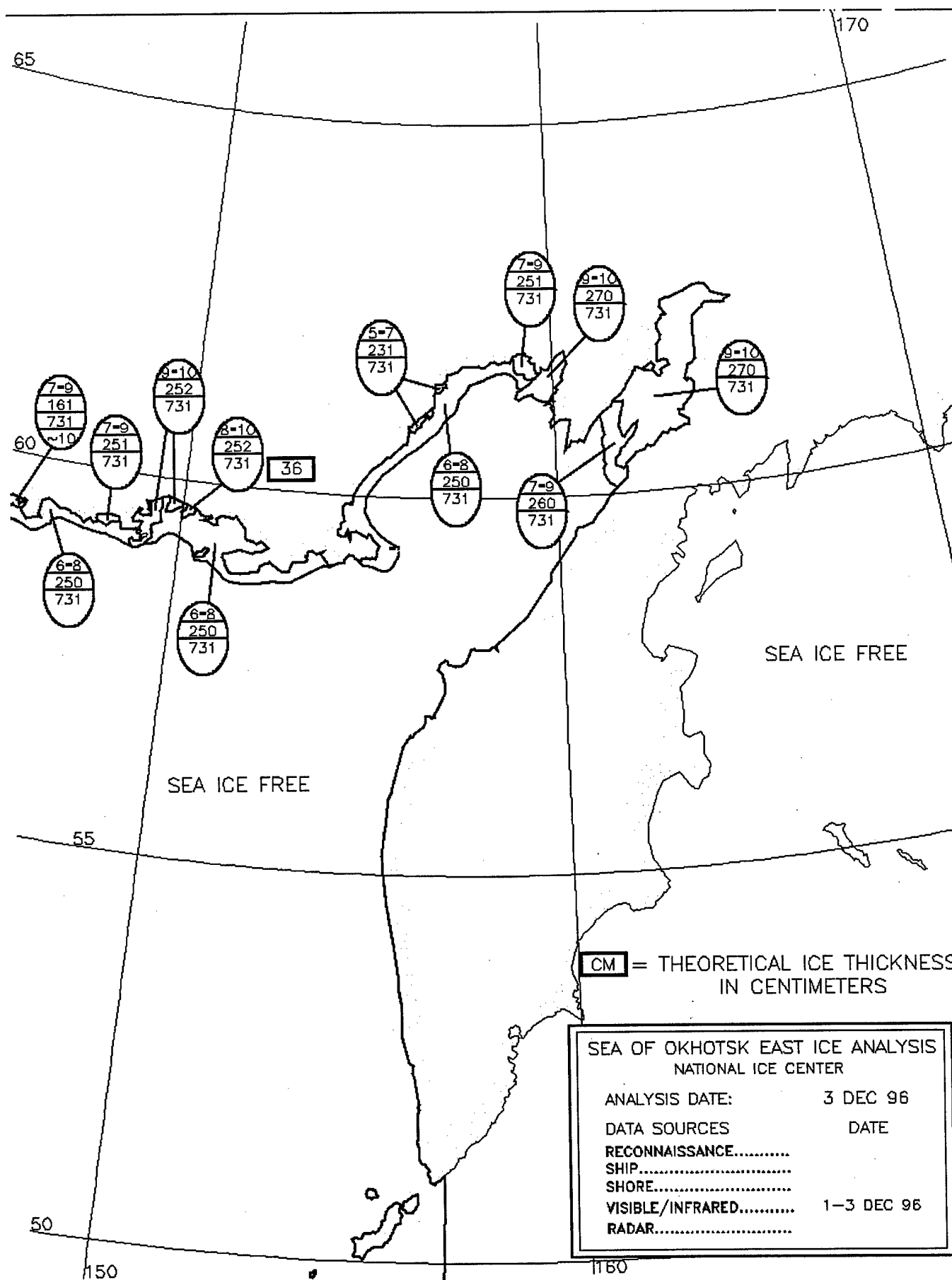
SEA OF OKHOTSK EAST ICE ANALYSIS
NATIONAL ICE CENTER

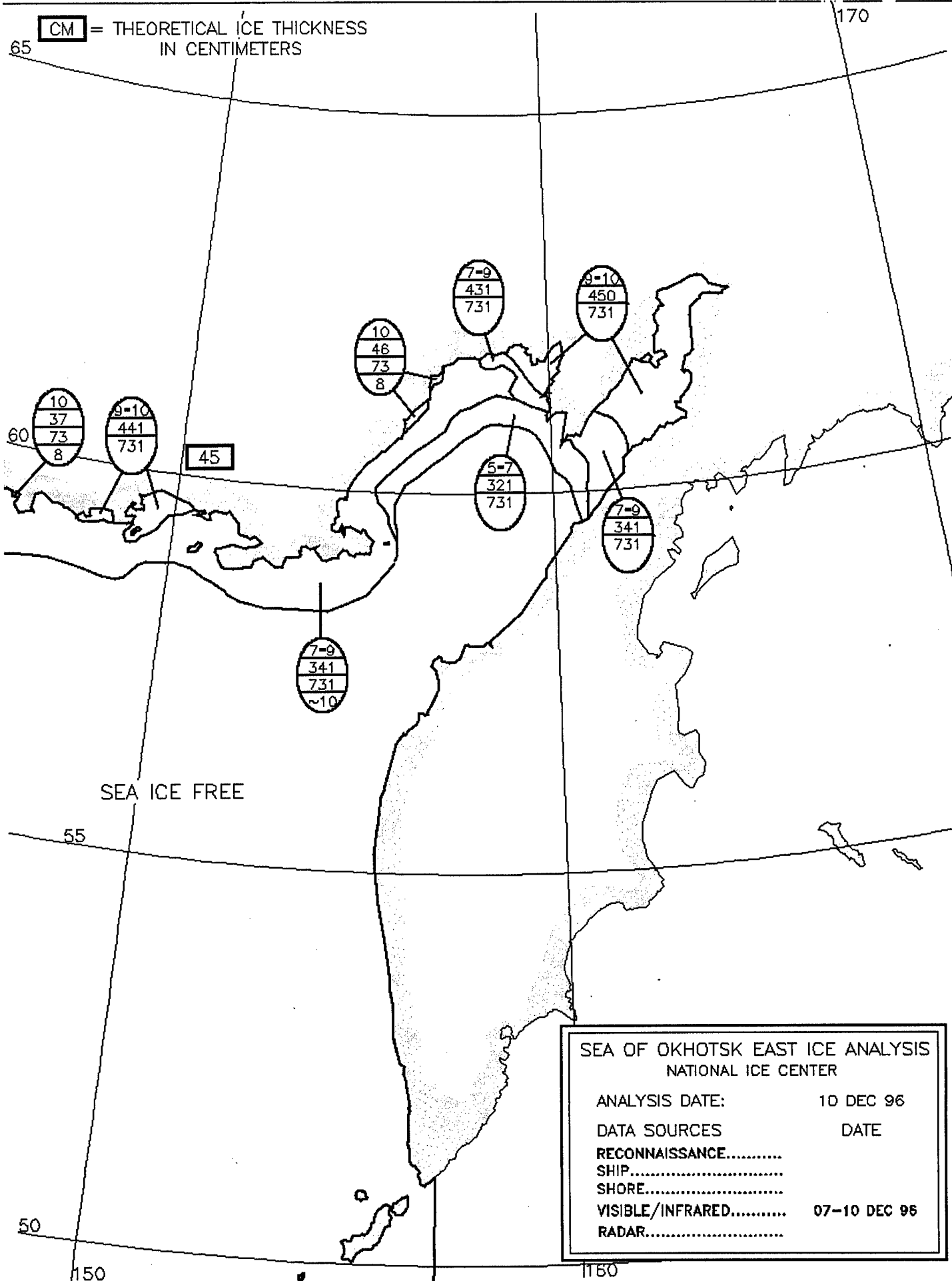
ANALYSIS DATE: 05 NOV 96
DATA SOURCES DATE
RECONNAISSANCE.....
SHIP.....
SHORE.....
VISIBLE/INFRARED..... 05 NOV 96
RADAR.....











CM = THEORETICAL ICE THICKNESS
IN CENTIMETERS

10
37
73
8

9-10
441
731

45

10
46
73
8

7-9
431
731

9-10
450
731

5-7
321
731

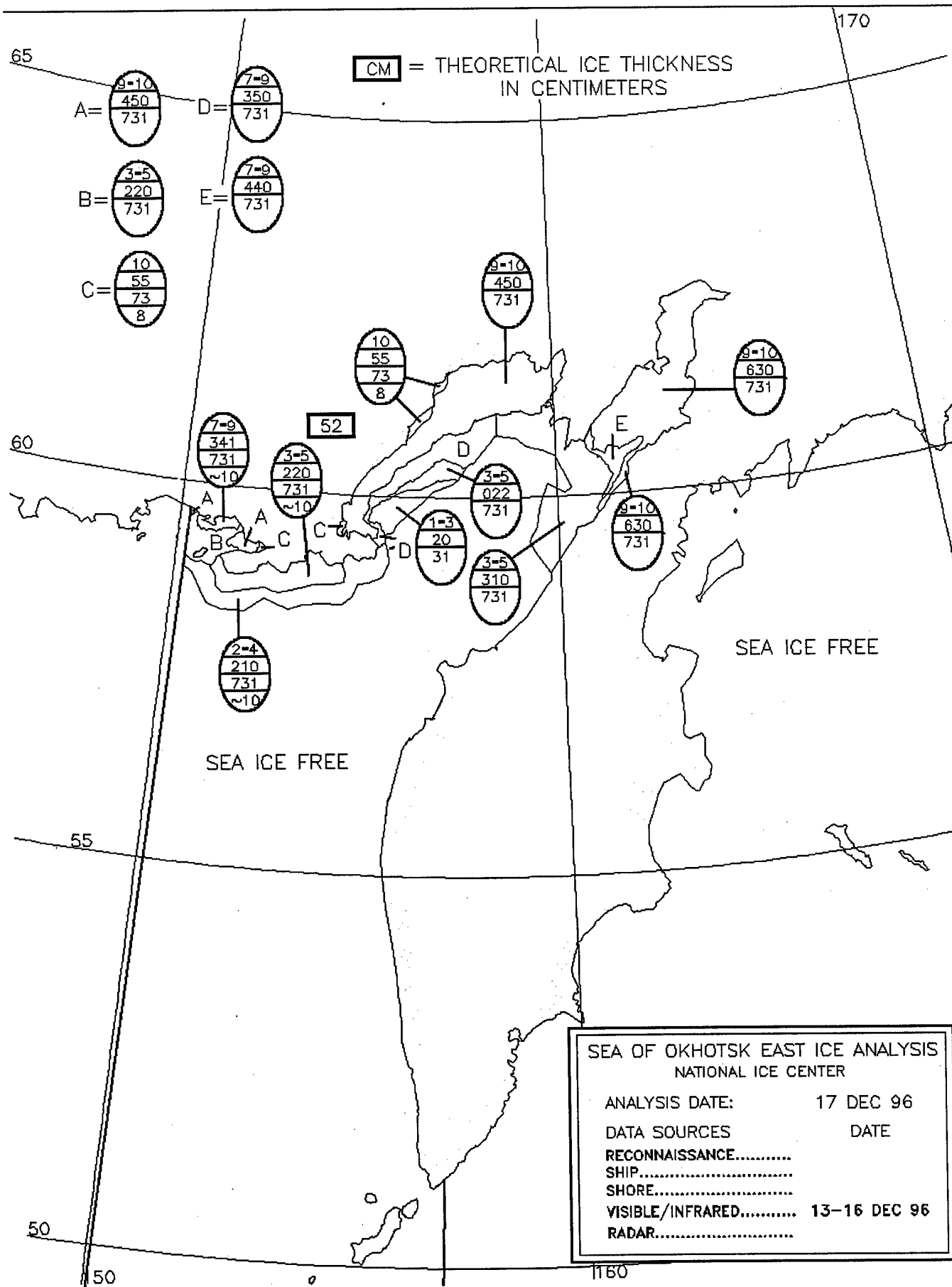
7-9
341
731

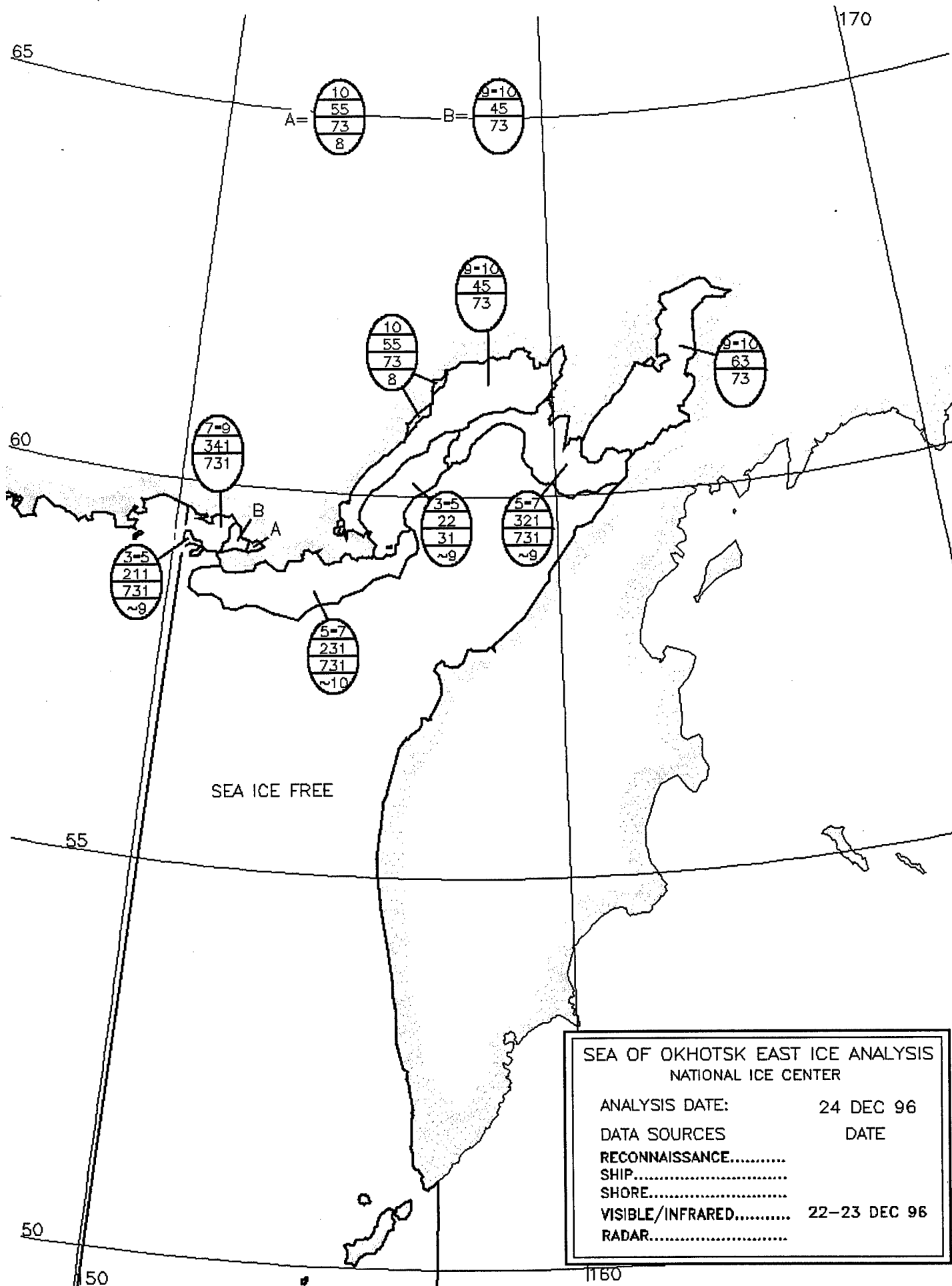
7-9
341
731
~10

SEA ICE FREE

SEA OF OKHOTSK EAST ICE ANALYSIS
NATIONAL ICE CENTER

ANALYSIS DATE:	10 DEC 96
DATA SOURCES	DATE
RECONNAISSANCE.....	
SHIP.....	
SHORE.....	
VISIBLE/INFRARED.....	07-10 DEC 96
RADAR.....	





SEA OF OKHOTSK EAST ICE ANALYSIS
NATIONAL ICE CENTER

ANALYSIS DATE: 24 DEC 96

DATA SOURCES DATE

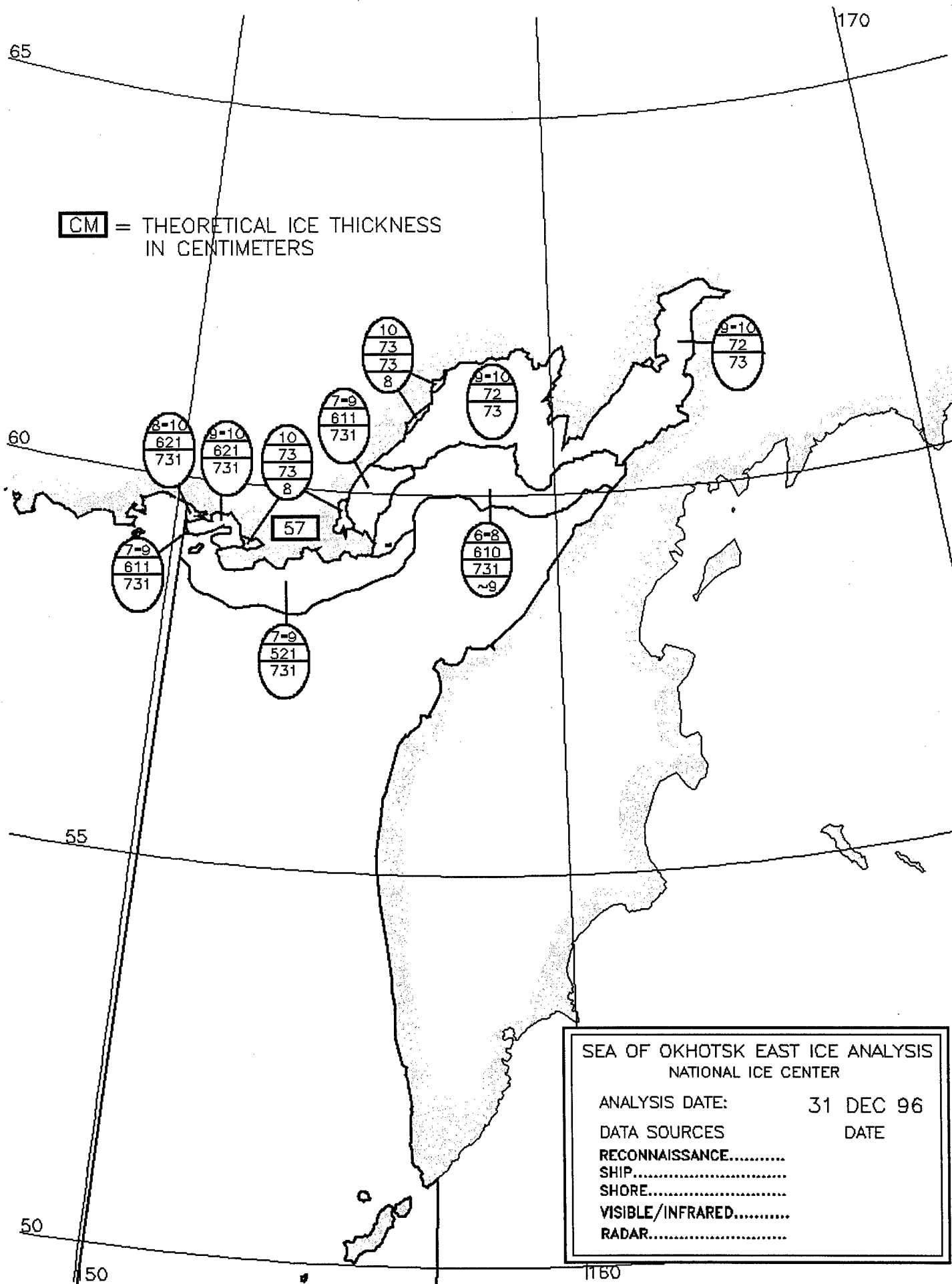
RECONNAISSANCE.....

SHIP.....

SHORE.....

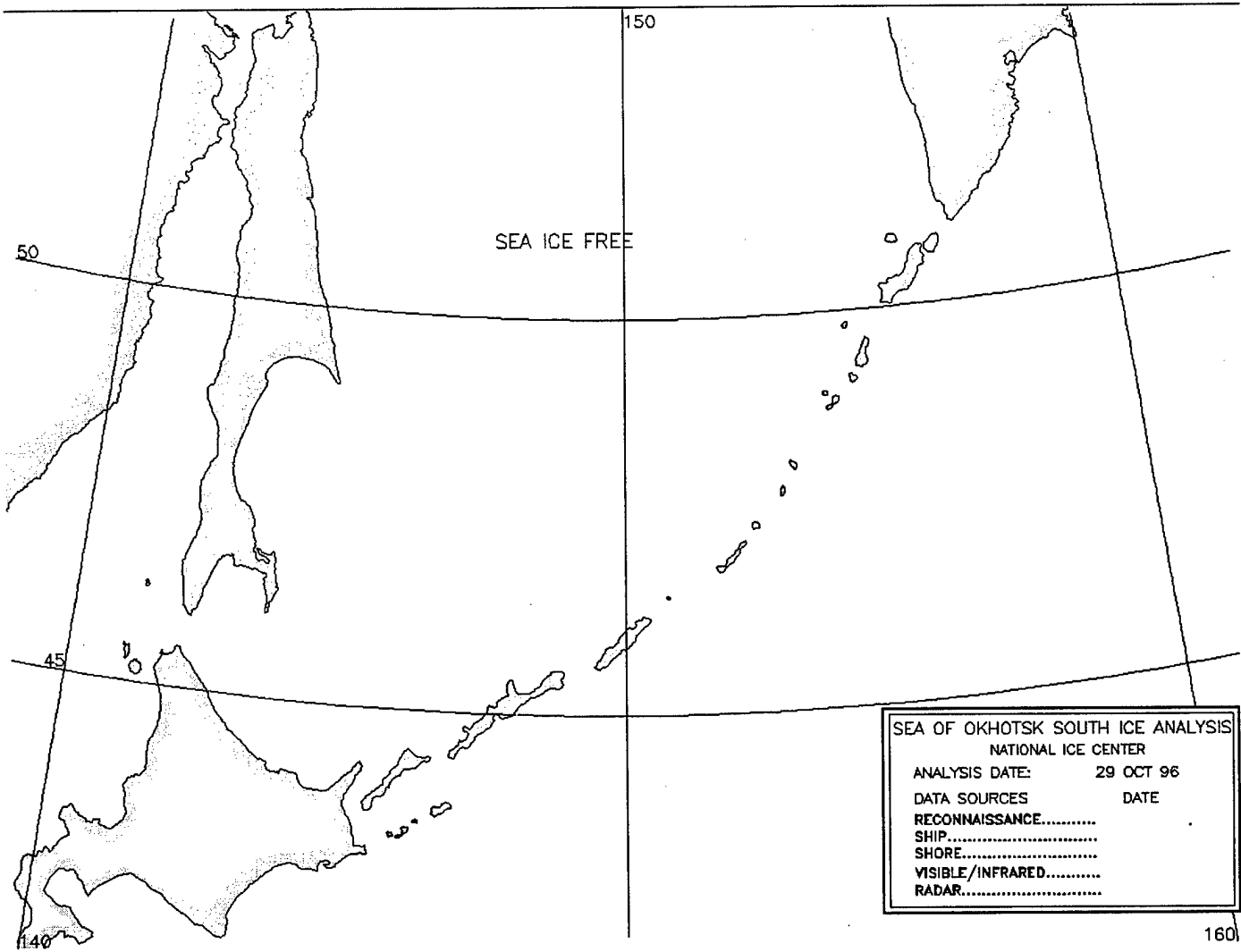
VISIBLE/INFRARED..... 22-23 DEC 96

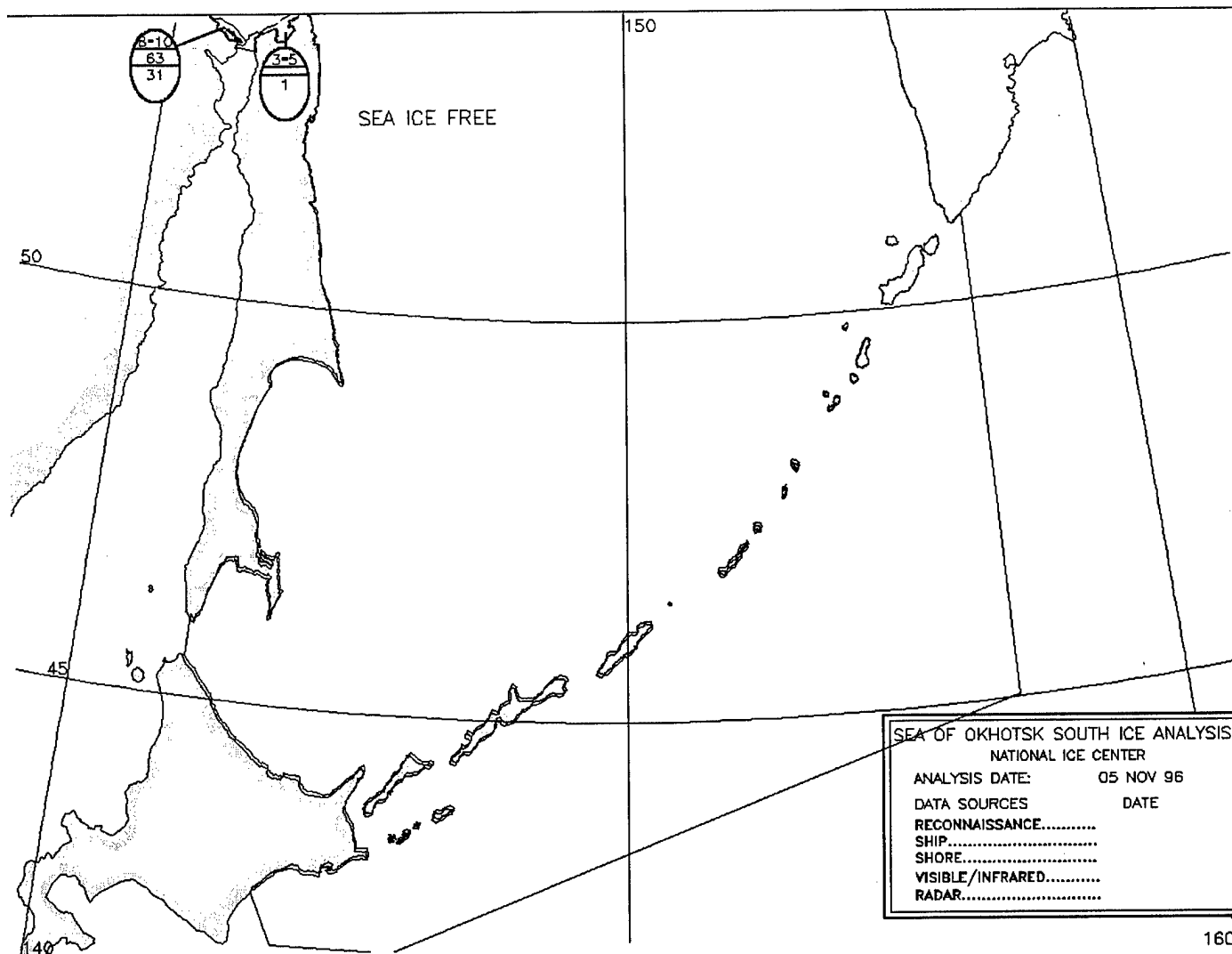
RADAR.....

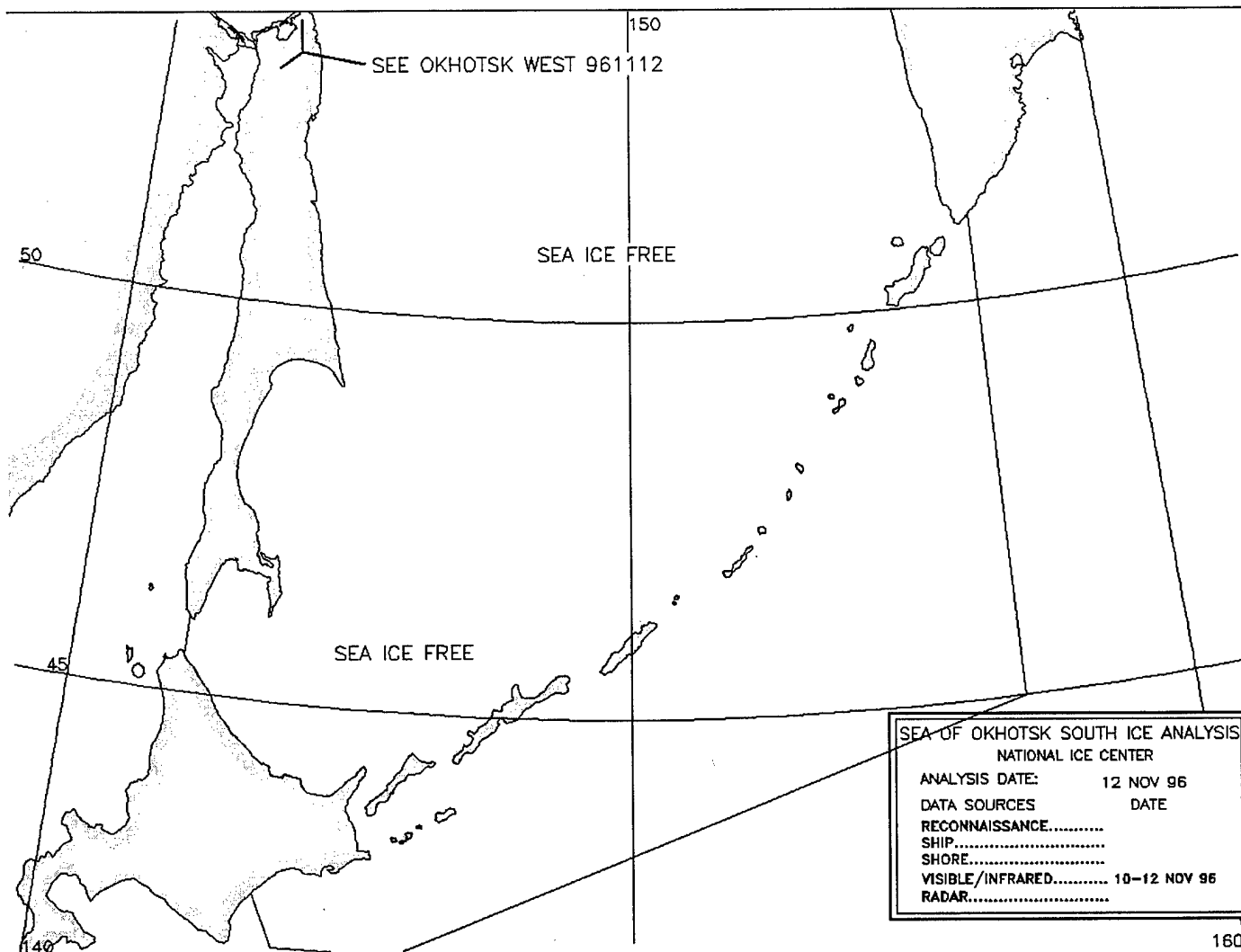


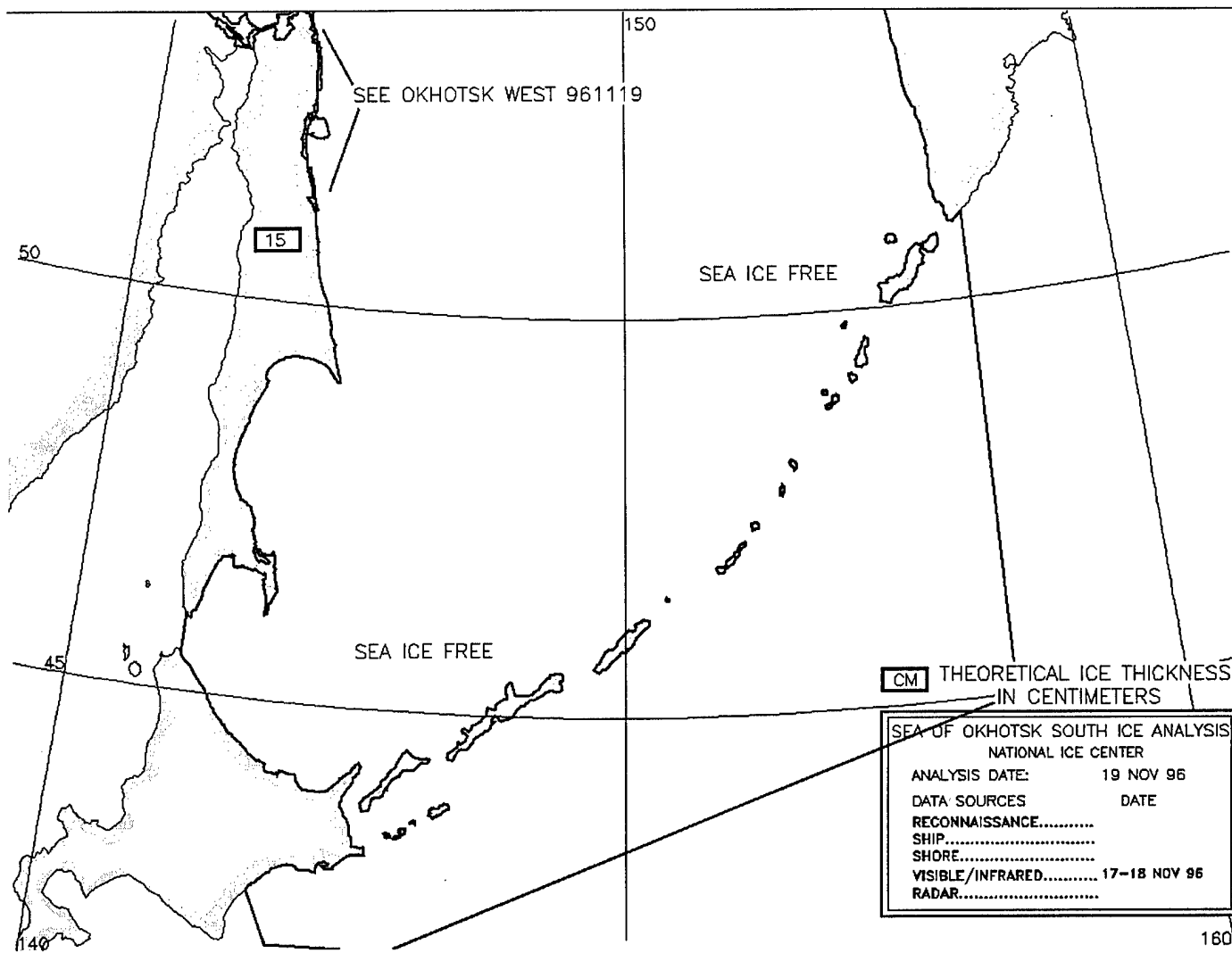
SEA OF OKHOTSK EAST ICE ANALYSIS
NATIONAL ICE CENTER

ANALYSIS DATE: 31 DEC 96
DATA SOURCES DATE
RECONNAISSANCE.....
SHIP.....
SHORE.....
VISIBLE/INFRARED.....
RADAR.....









SEE OKHOTSK WEST 961119

15

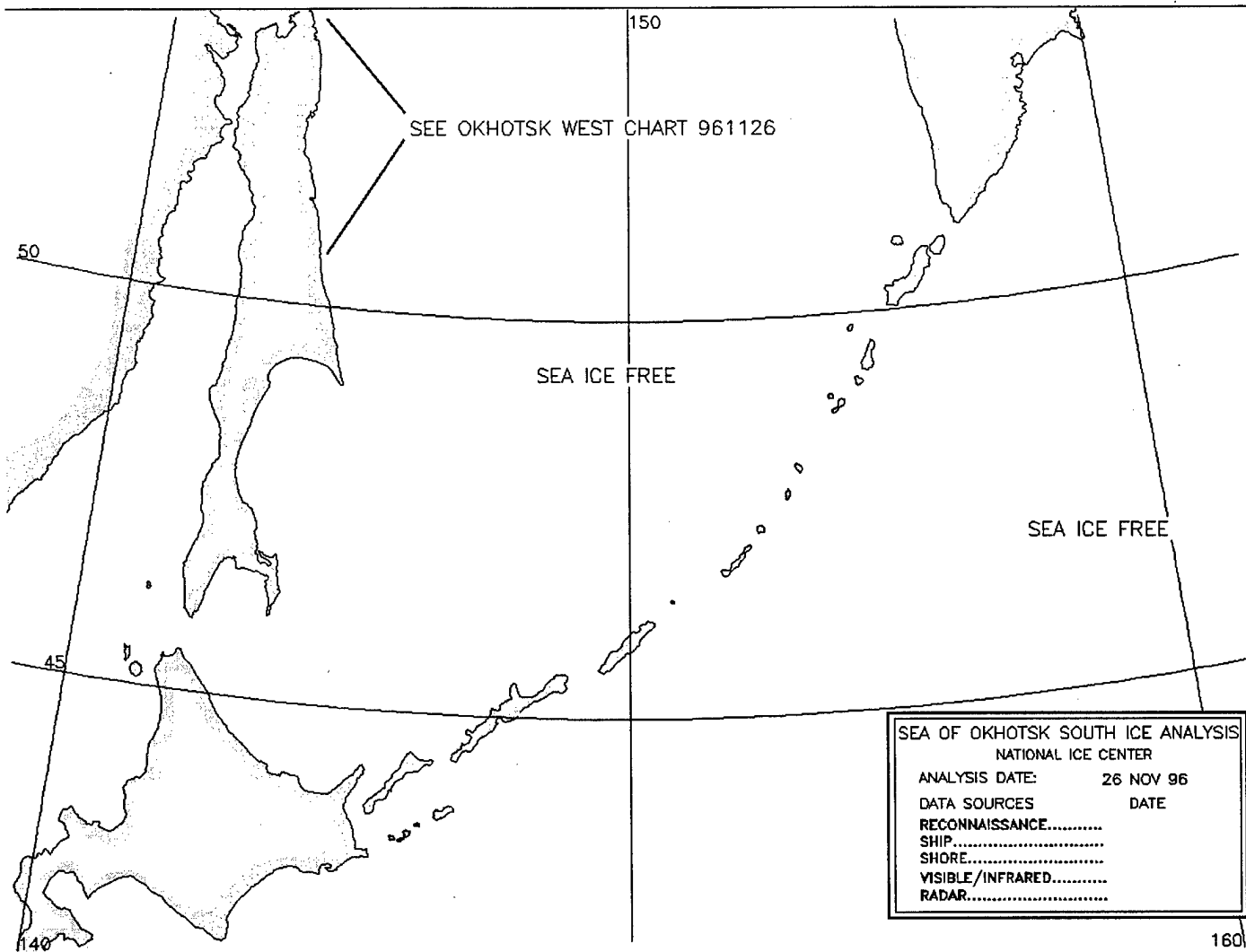
SEA ICE FREE

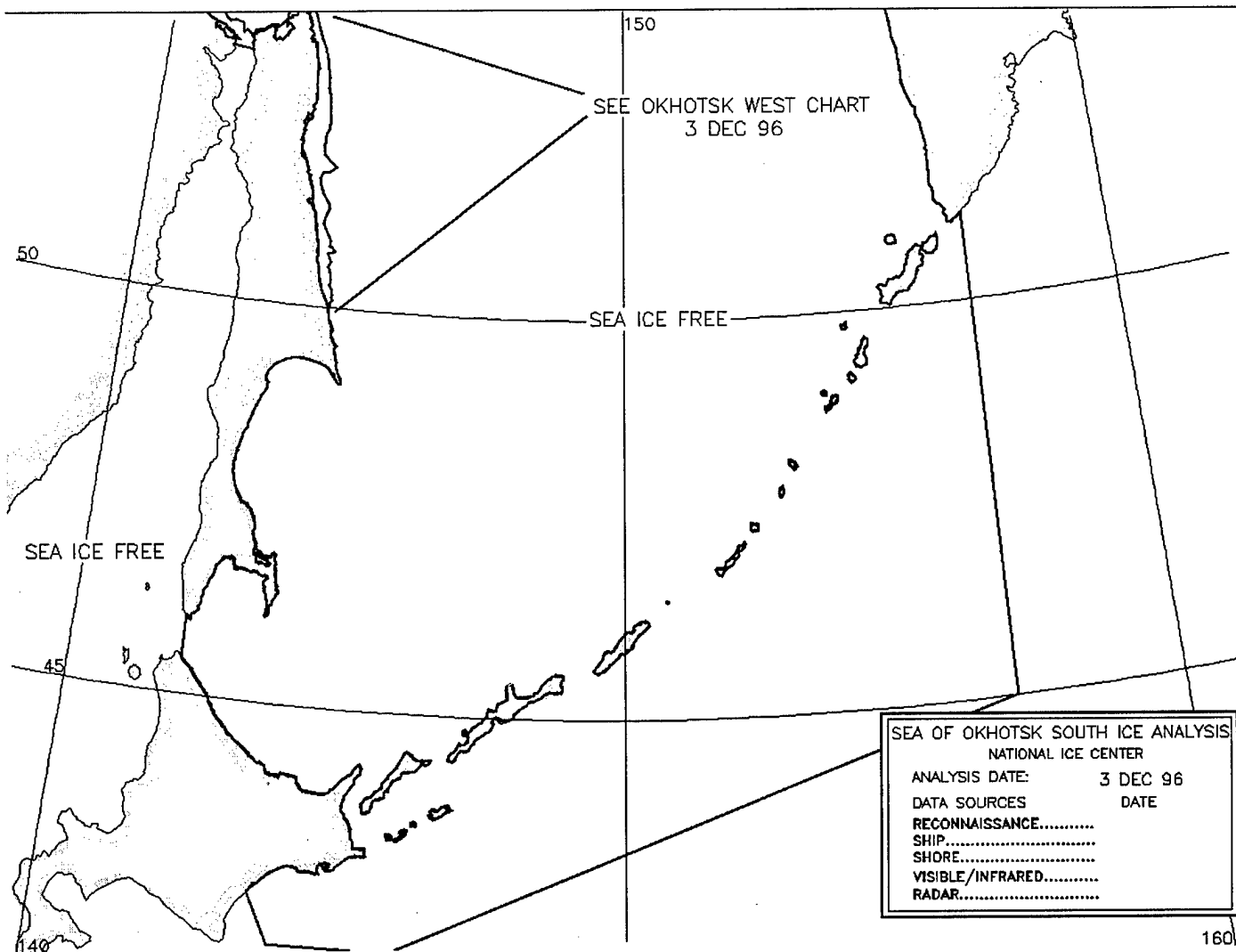
SEA ICE FREE

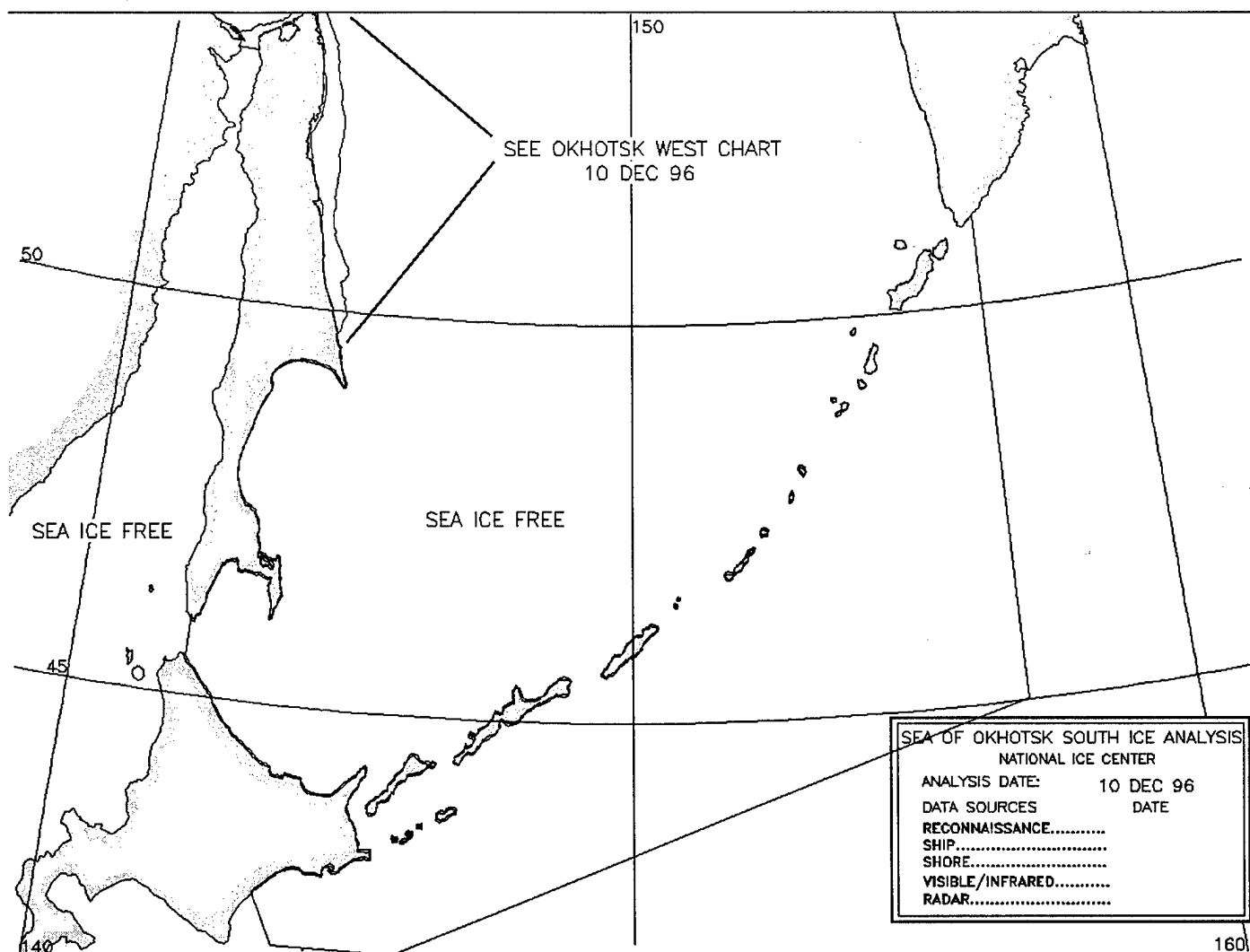
CM THEORETICAL ICE THICKNESS
IN CENTIMETERS

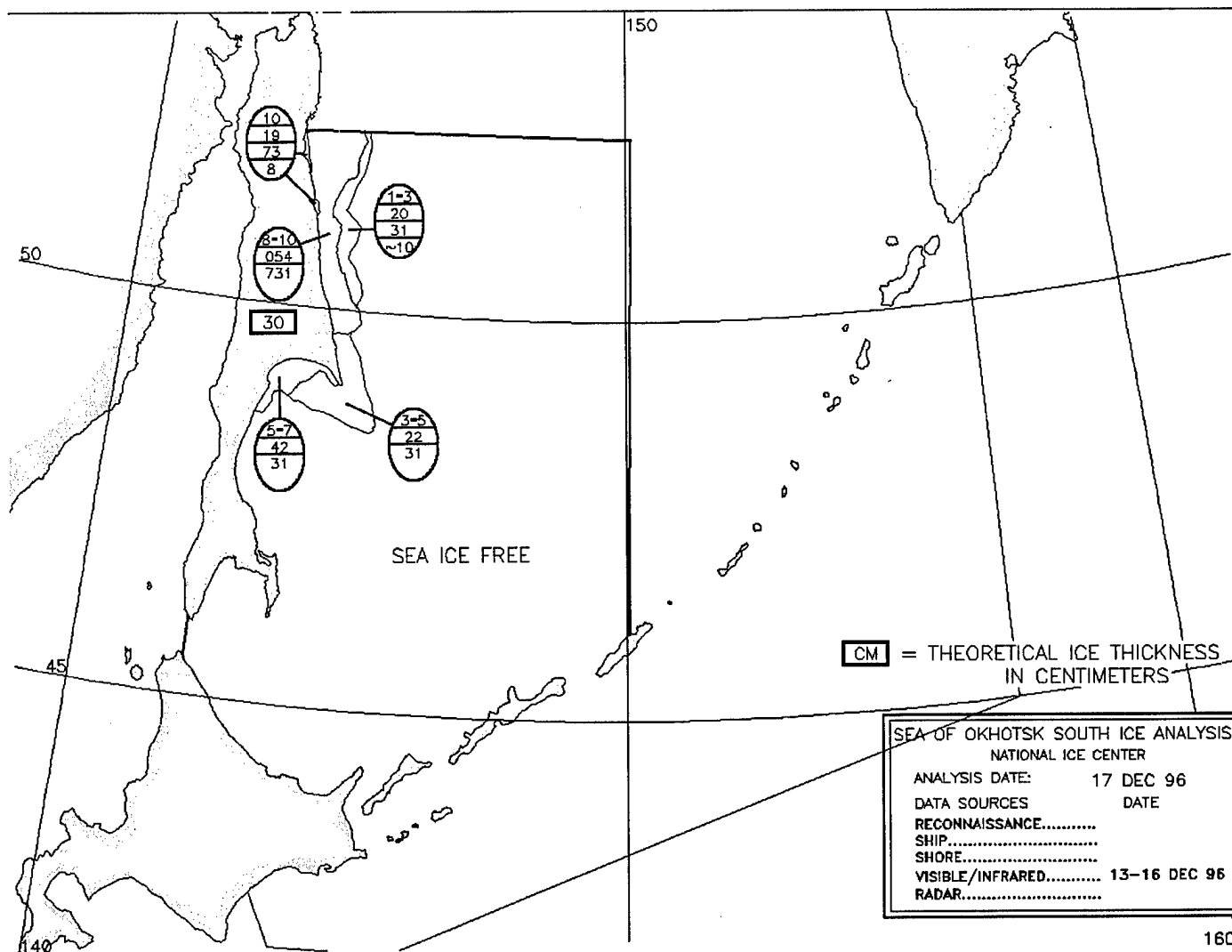
SEA OF OKHOTSK SOUTH ICE ANALYSIS
NATIONAL ICE CENTER
ANALYSIS DATE: 19 NOV 96
DATA SOURCES DATE
RECONNAISSANCE.....
SHIP.....
SHORE.....
VISIBLE/INFRARED..... 17-18 NOV 96
RADAR.....

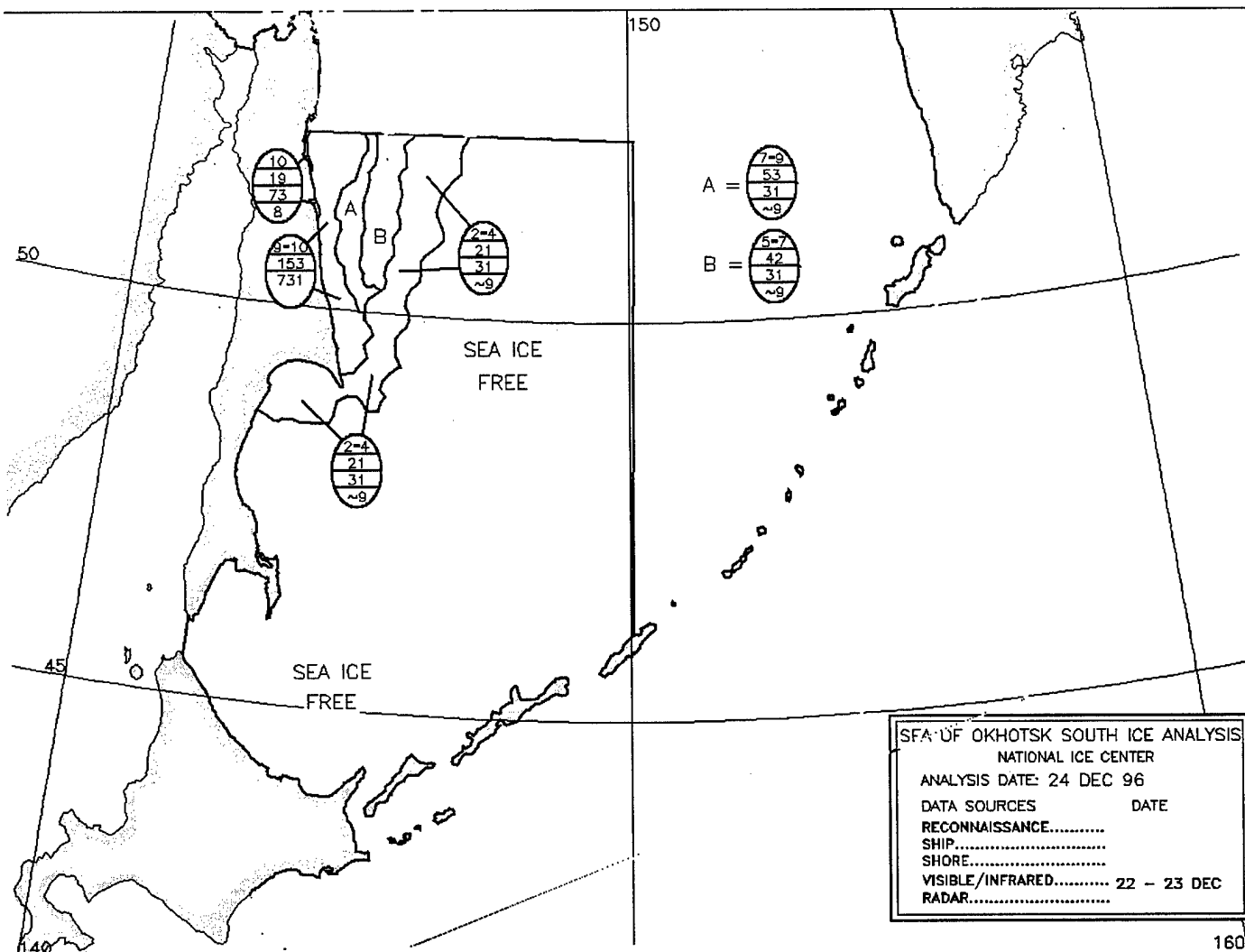
160

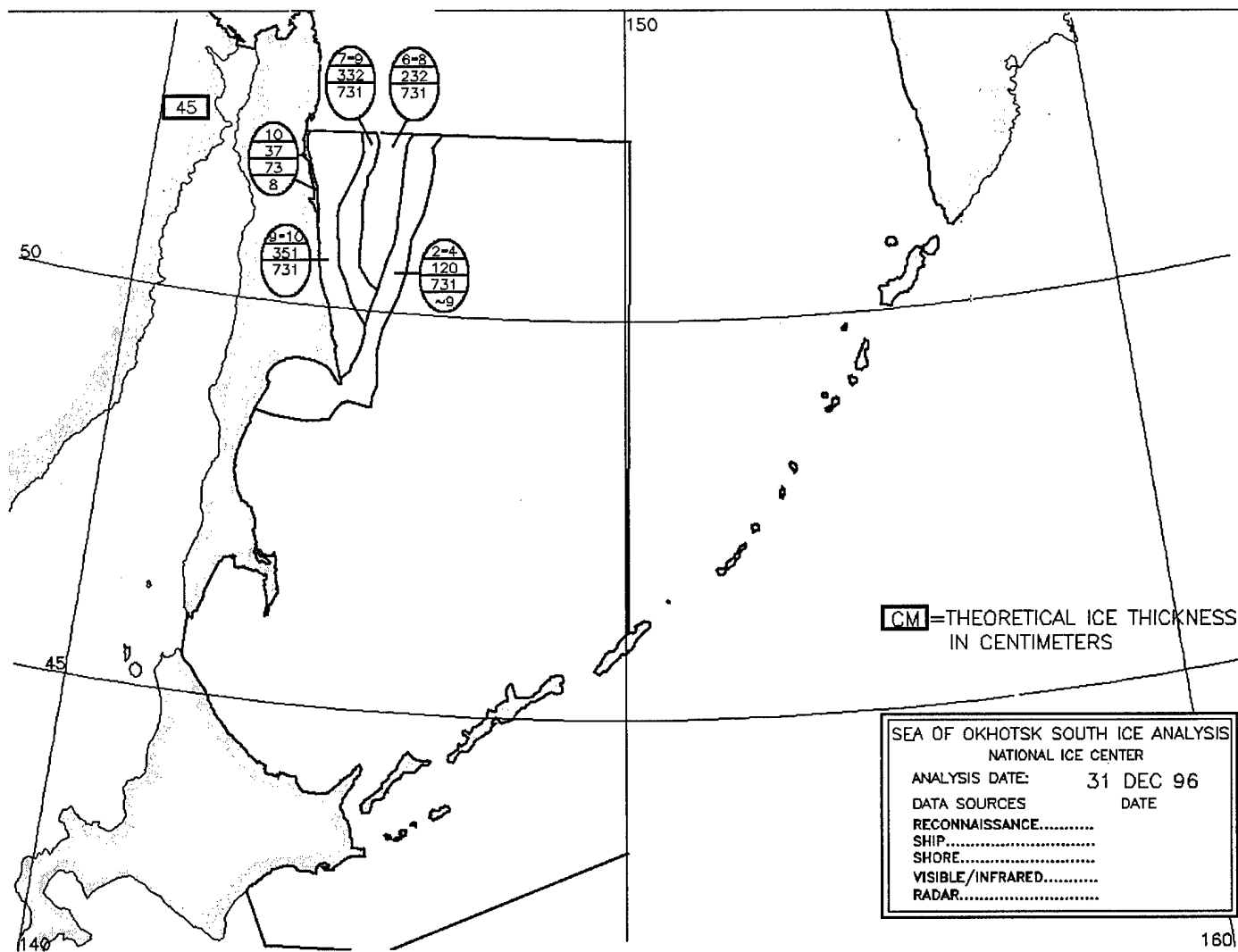












KAMCHATKA PENINSULA ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 25 OCT 96

DATA SOURCES

DATE

RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED.....

RADAR.....

SEA ICE
FREE

SEA ICE
FREE

SEA ICE
FREE

55

50

160

170

KAMCHATKA PENINSULA ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 29 OCT 96

DATA SOURCES

DATE

RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED.....

RADAR.....

SEA ICE
FREE

SEA ICE
FREE

55

50

SEA ICE
FREE

160

170

KAMCHATKA PENINSULA ICE ANALYSIS
NATIONAL ICE CENTER

ANALYSIS DATE: 1 NOV 96

DATA SOURCES

DATE

RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED.....

RADAR.....

SEA ICE FREE

SEA ICE FREE

SEA ICE FREE

55

50

160

170

KAMCHATKA PENINSULA ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 5 NOV 96

DATA SOURCES

DATE

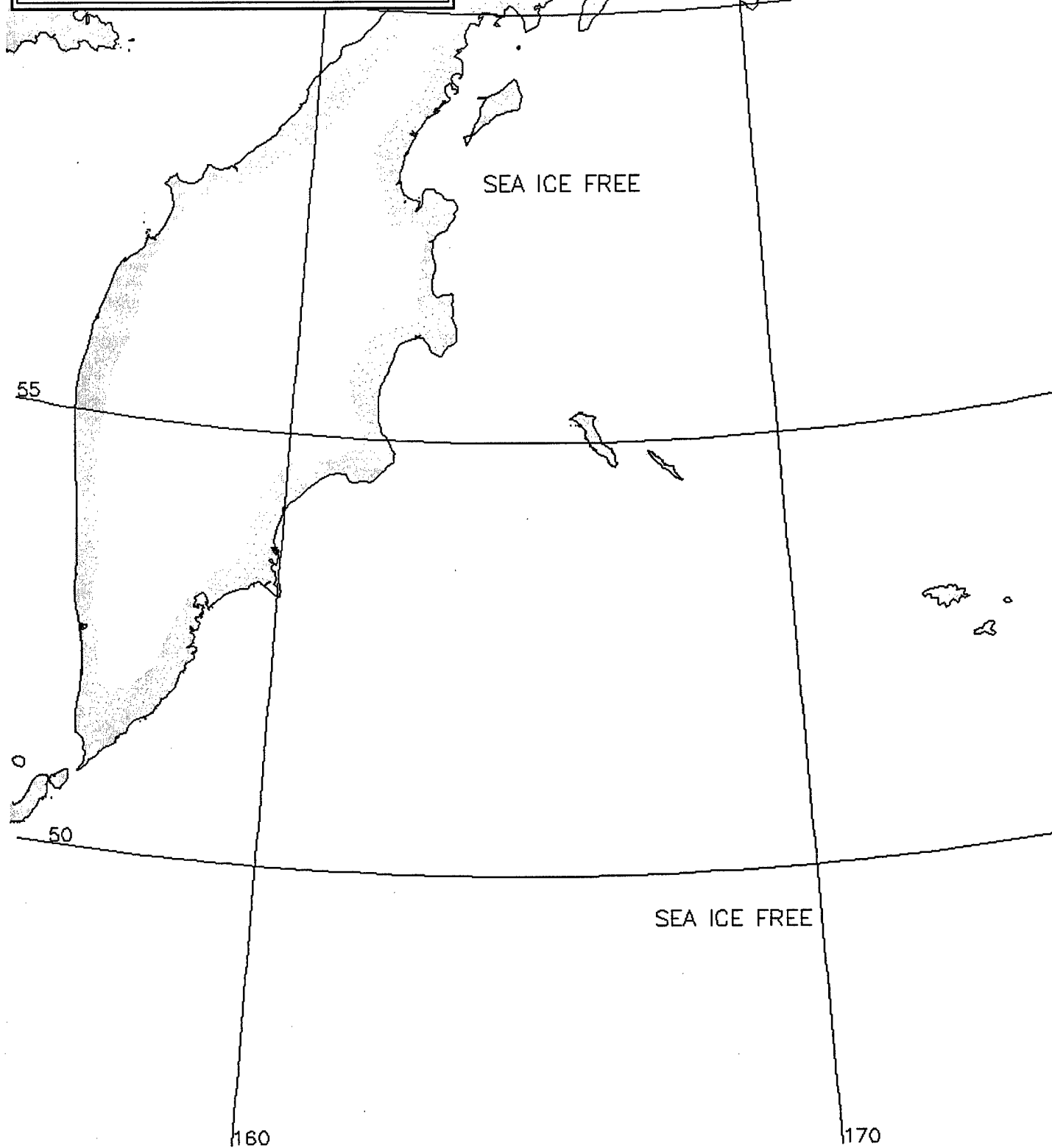
RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED.....

RADAR.....



KAMCHATKA PENINSULA ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 12 NOV 96

DATA SOURCES DATE

RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED.....

RADAR.....

55

SEA ICE FREE

50

160

170

KAMCHATKA PENINSULA ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 19 NOV 96

DATA SOURCES

DATE

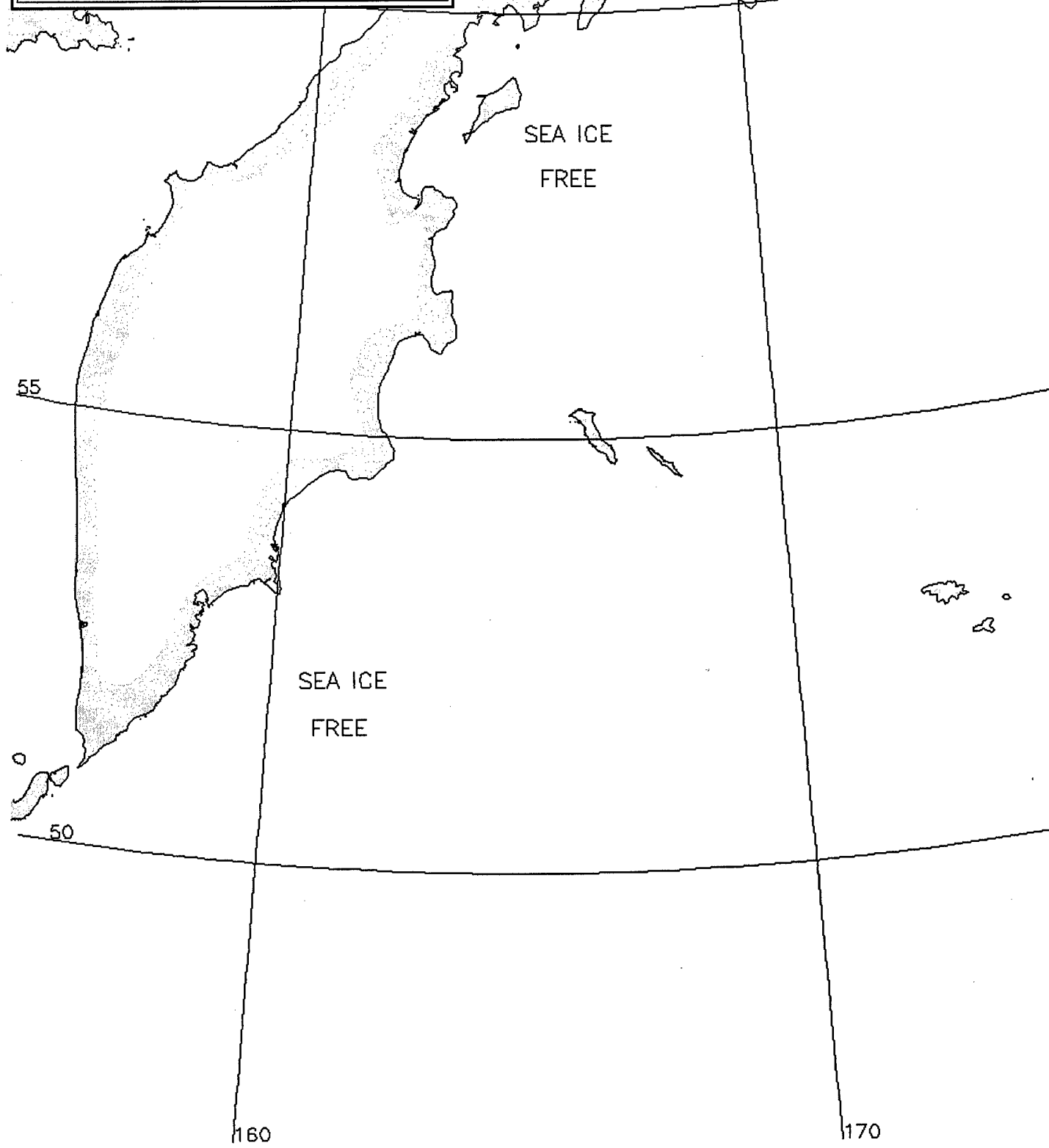
RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED.....

RADAR.....



SEA ICE
FREE

SEA ICE
FREE

SEA ICE
FREE

55

50

160

170

KAMCHATKA PENINSULA ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 26 NOV 96

DATA SOURCES DATE

RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 25 NOV

RADAR.....



55

SEA ICE FREE

50

160

170

KAMCHATKA PENINSULA ICE ANALYSIS
NATIONAL ICE CENTER

ANALYSIS DATE: 3 DEC 96

DATA SOURCES DATE

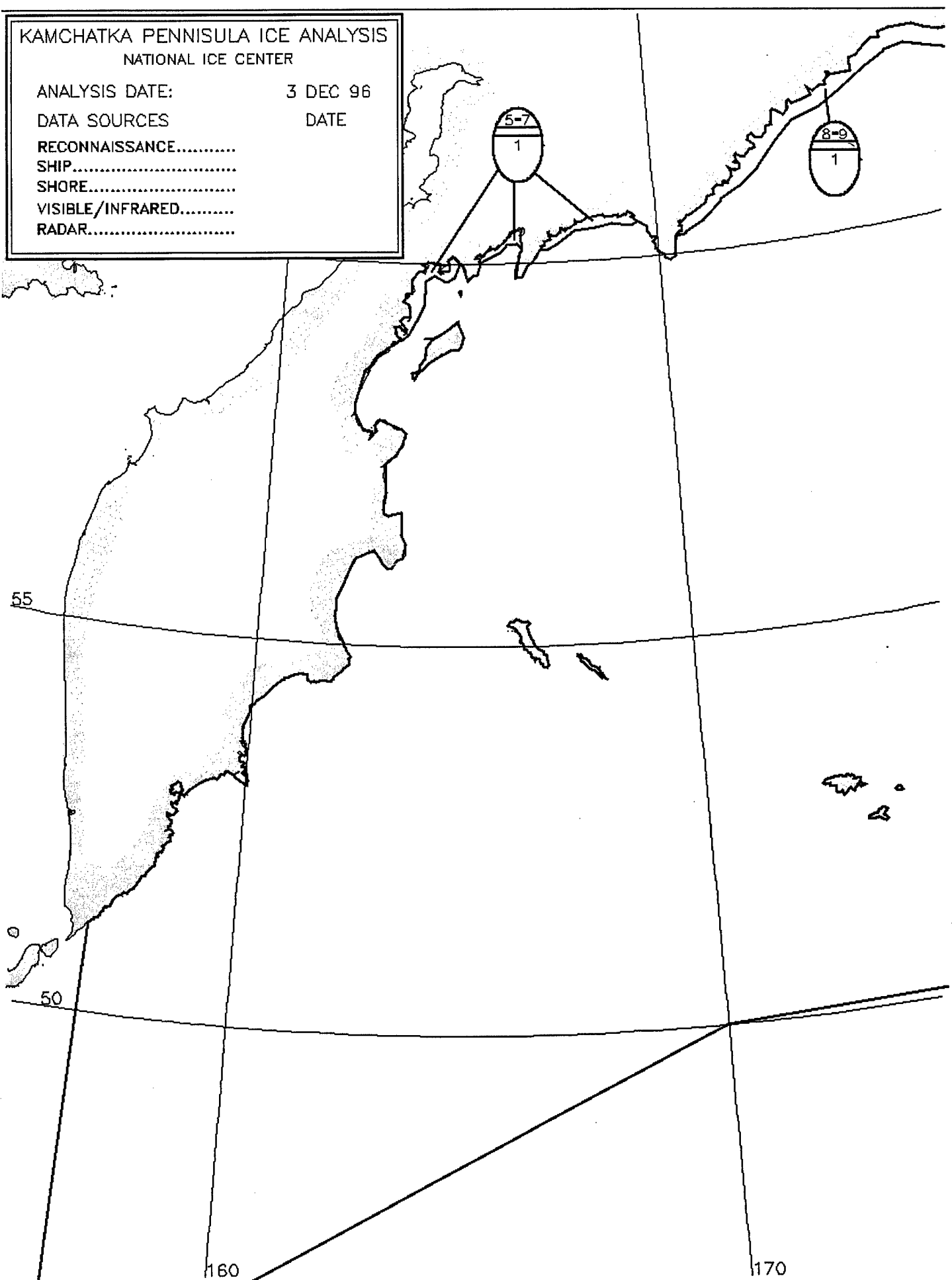
RECONNAISSANCE.....

SHIP.....

SHORE.....

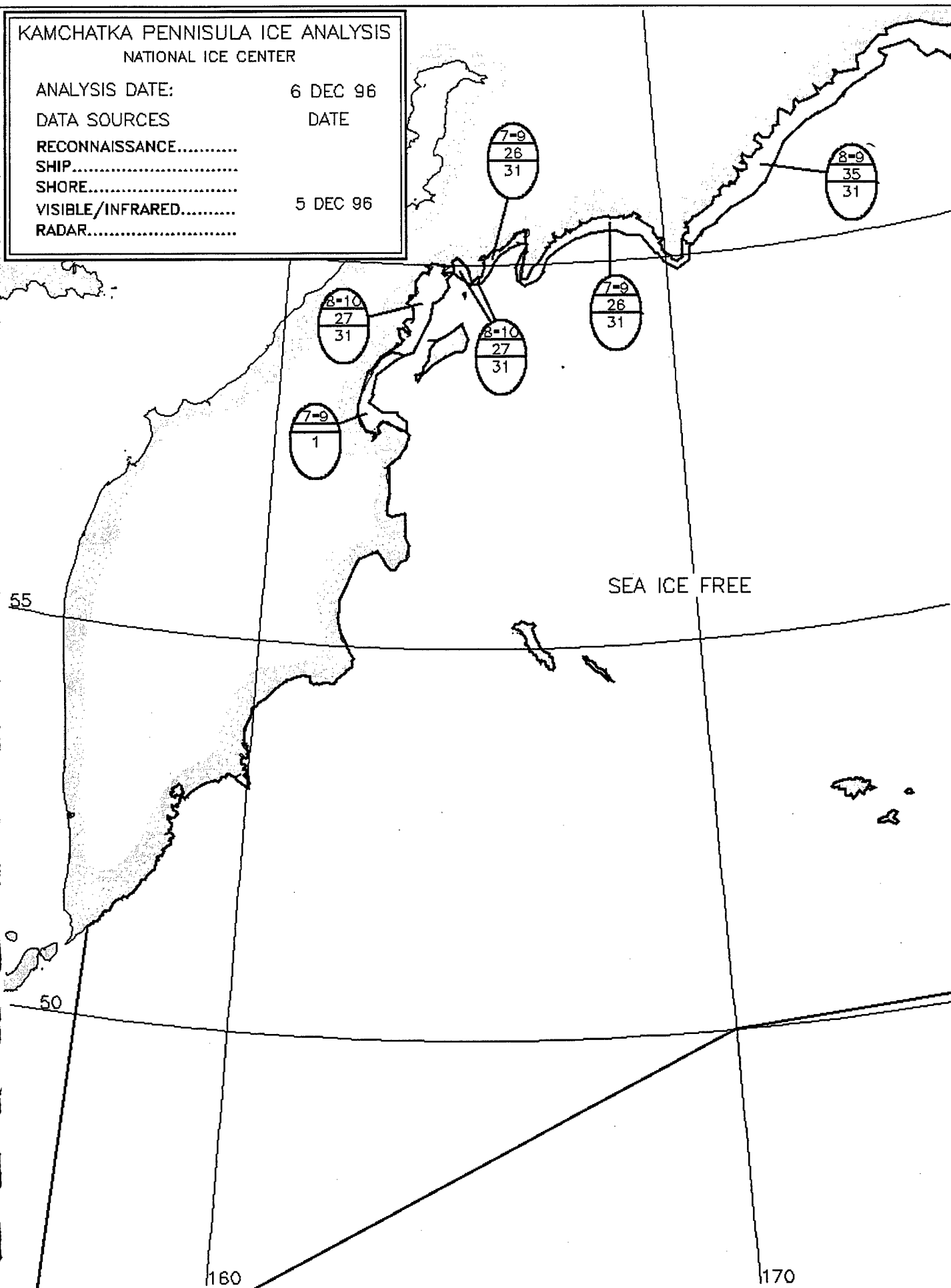
VISIBLE/INFRARED.....

RADAR.....



KAMCHATKA PENINSULA ICE ANALYSIS
NATIONAL ICE CENTER

ANALYSIS DATE: 6 DEC 96
DATA SOURCES DATE
RECONNAISSANCE.....
SHIP.....
SHORE.....
VISIBLE/INFRARED..... 5 DEC 96
RADAR.....



KAMCHATKA PENINSULA ICE ANALYSIS
NATIONAL ICE CENTER

ANALYSIS DATE: 10 DEC 96

DATA SOURCES DATE

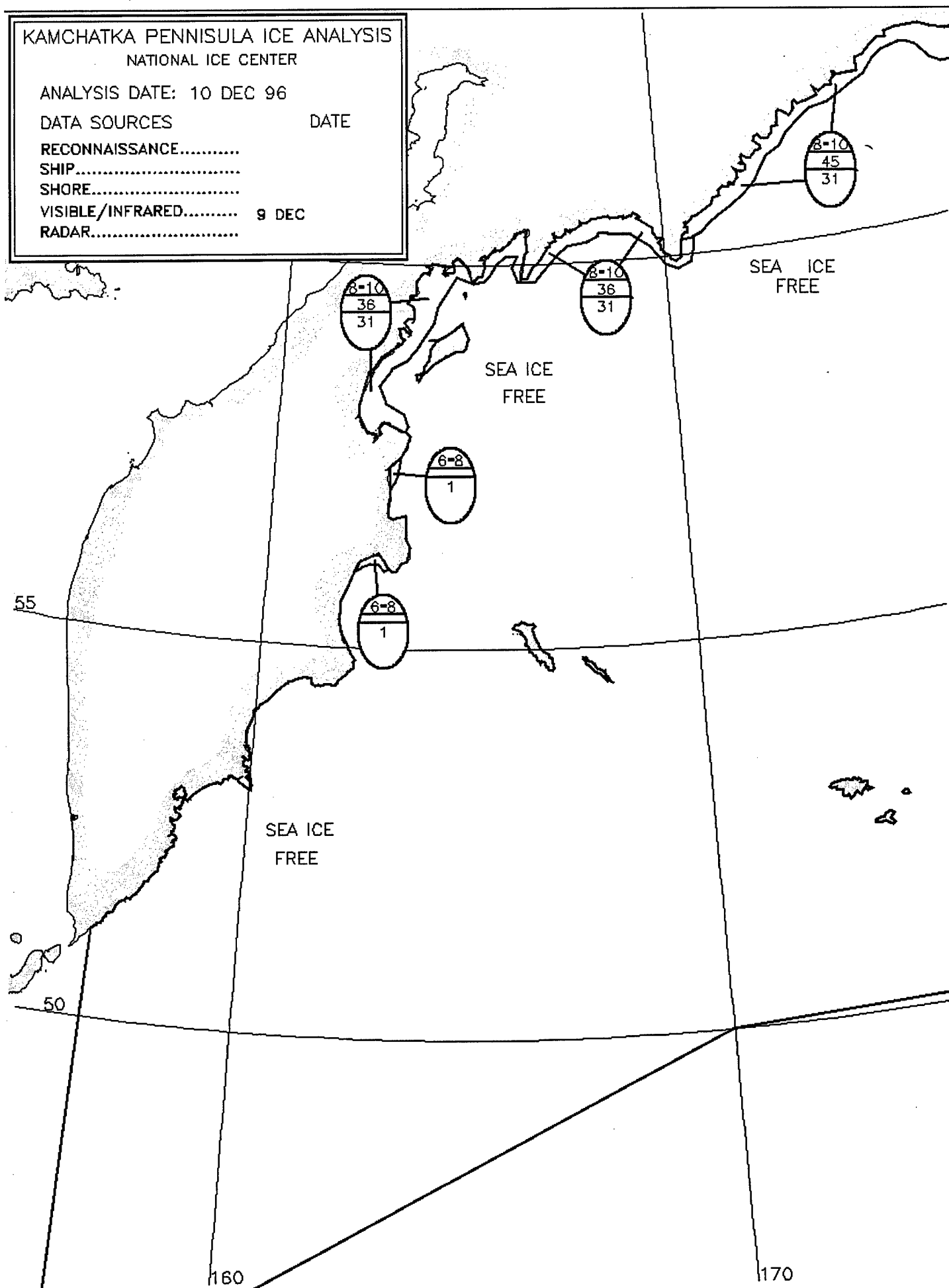
RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 9 DEC

RADAR.....



KAMCHATKA PENINSULA ICE ANALYSIS
NATIONAL ICE CENTER

ANALYSIS DATE: 13 DEC 96

DATA SOURCES DATE

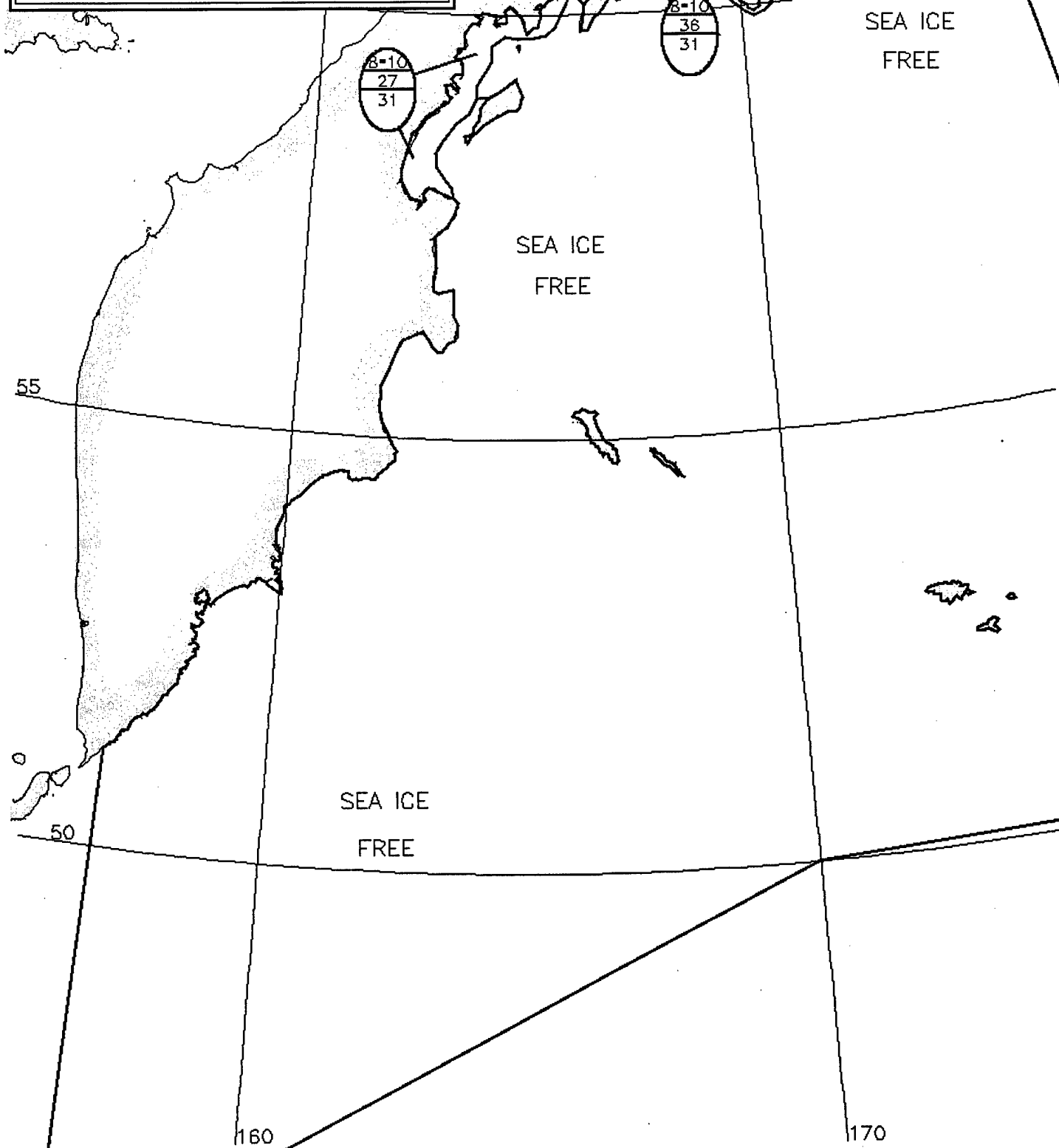
RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 12 DEC

RADAR.....



KAMCHATKA PENINSULA ICE ANALYSIS
NATIONAL ICE CENTER

ANALYSIS DATE: 17 DEC 96

DATA SOURCES DATE

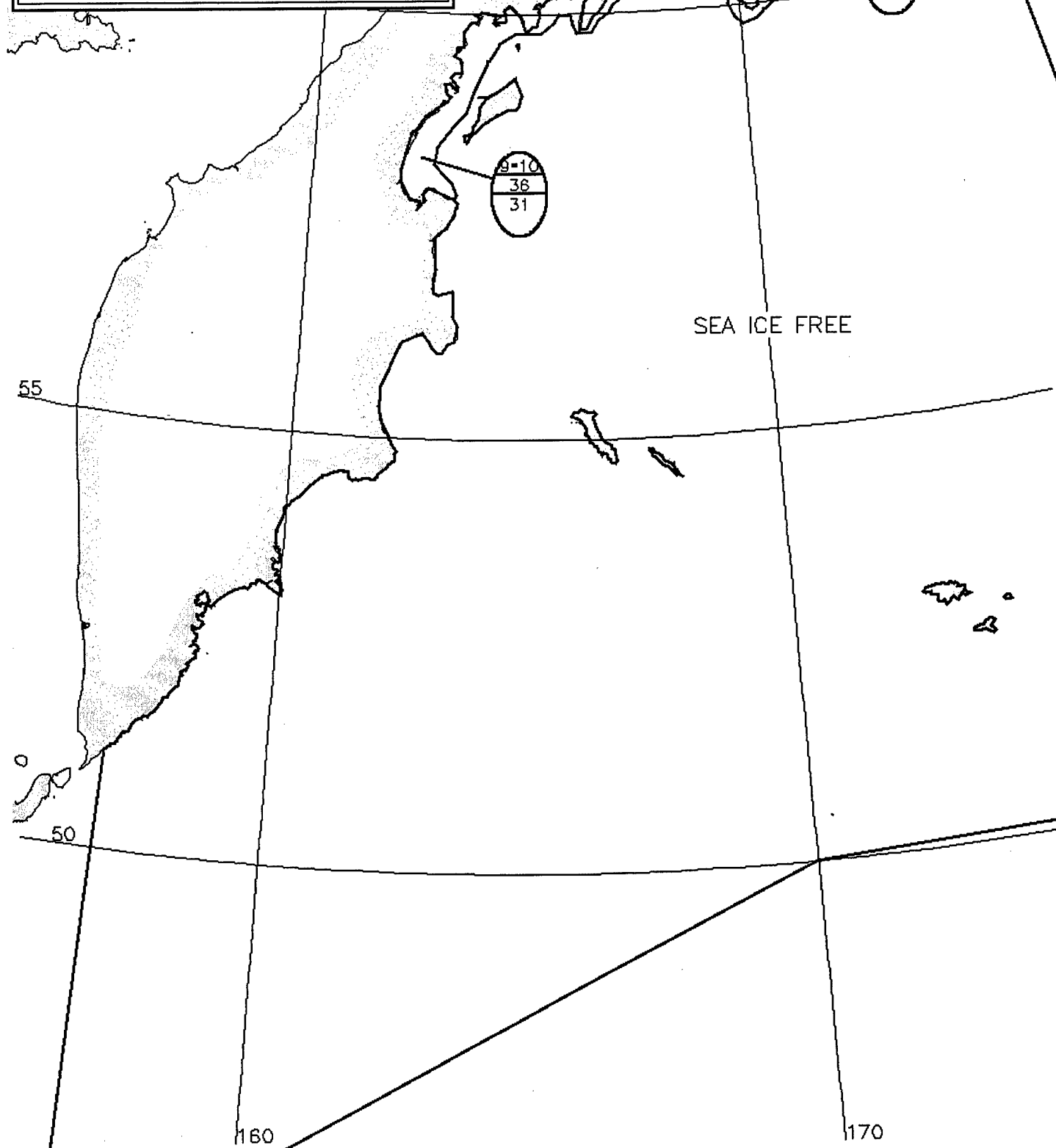
RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 15 DEC 96

RADAR.....



KAMCHATKA PENINSULA ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 20 DEC 96

DATA SOURCES

DATE

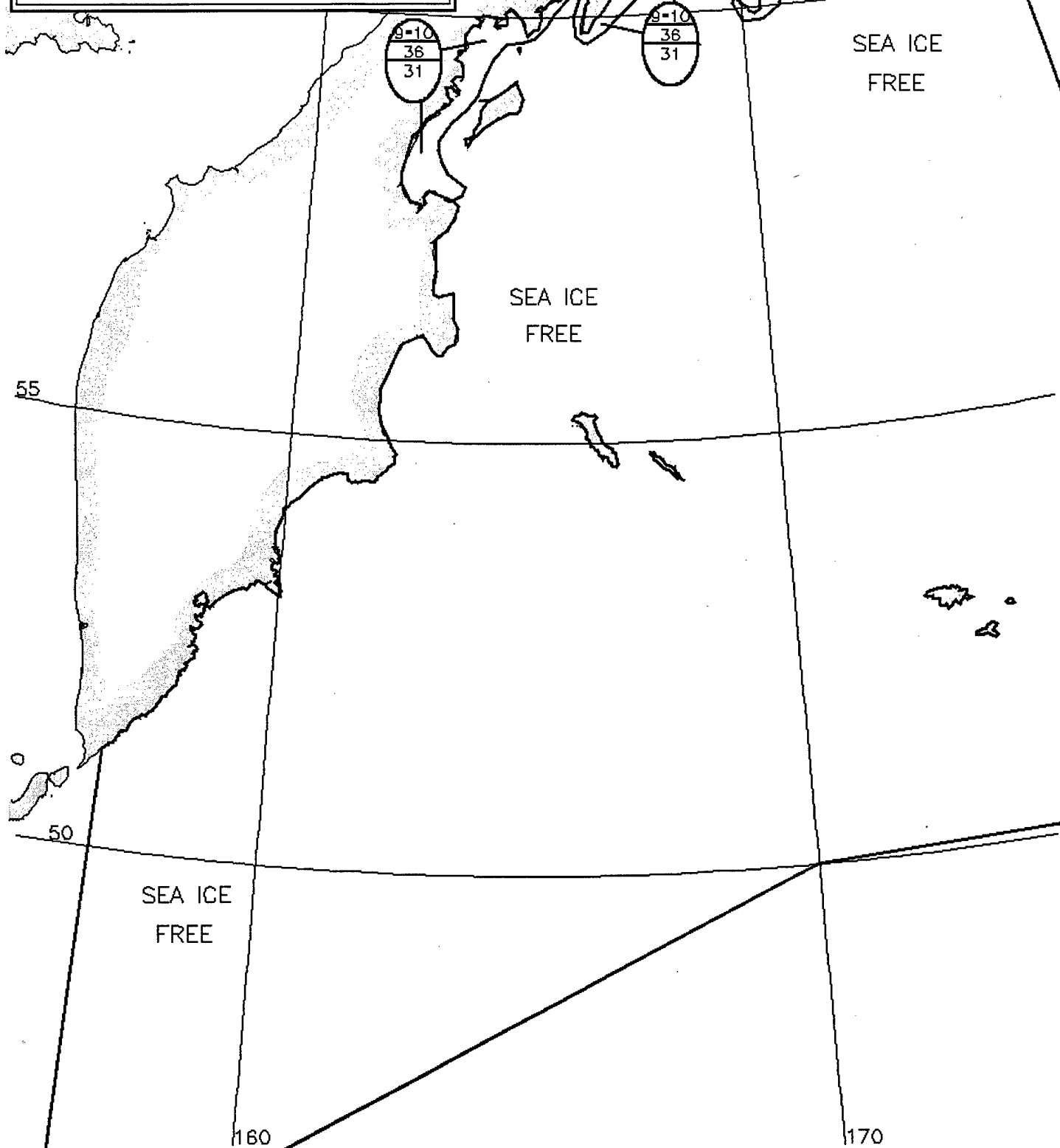
RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED.....

RADAR.....



KAMCHATKA PENINSULA ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 24 DEC 96

DATA SOURCES

DATE

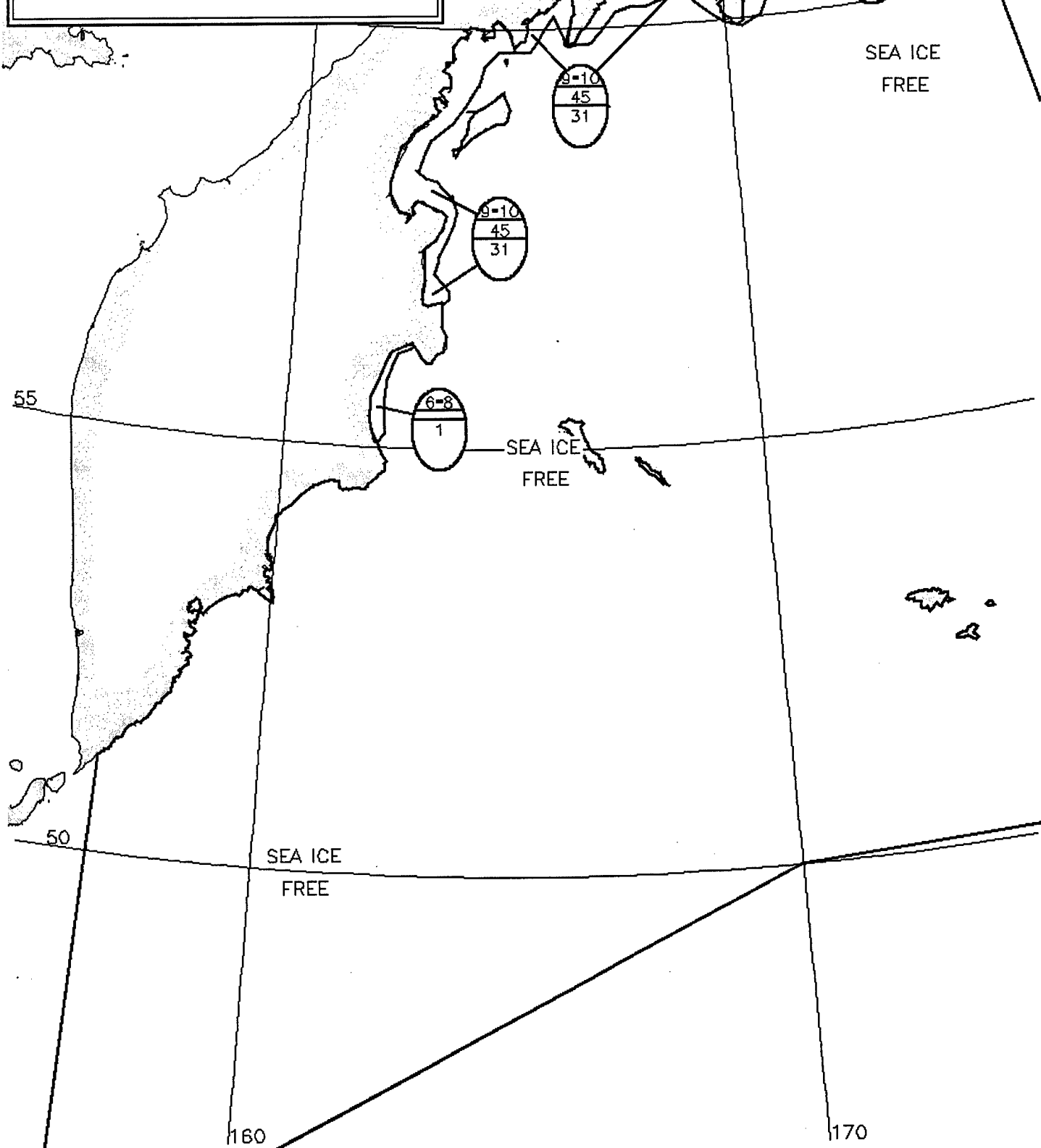
RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 22 - 23 DEC

RADAR.....



KAMCHATKA PENINSULA ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 27 DEC 96

DATA SOURCES DATE

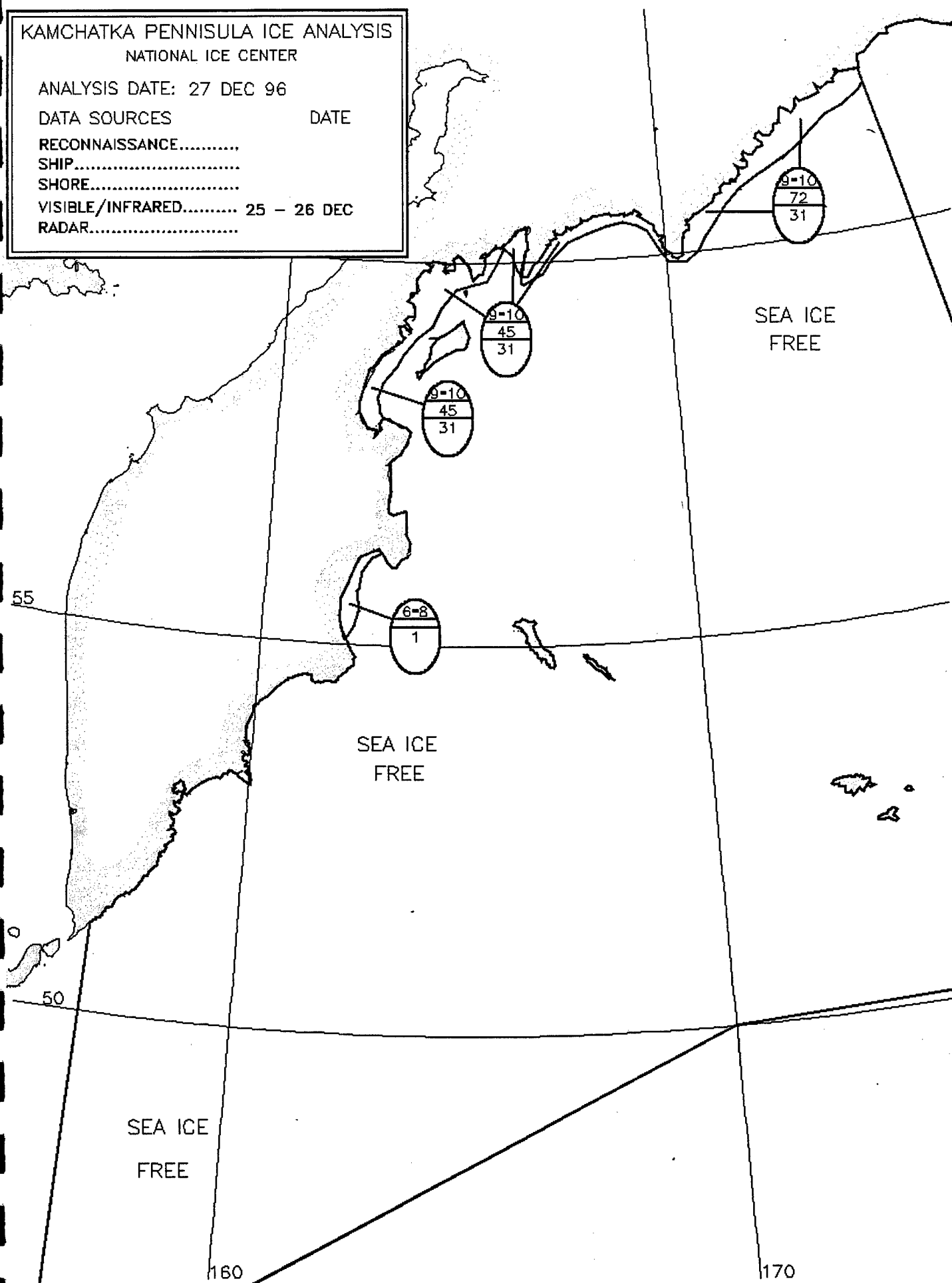
RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 25 - 26 DEC

RADAR.....



KAMCHATKA PENINSULA ICE ANALYSIS
NATIONAL ICE CENTER

ANALYSIS DATE: 31 DEC 96

DATA SOURCES DATE

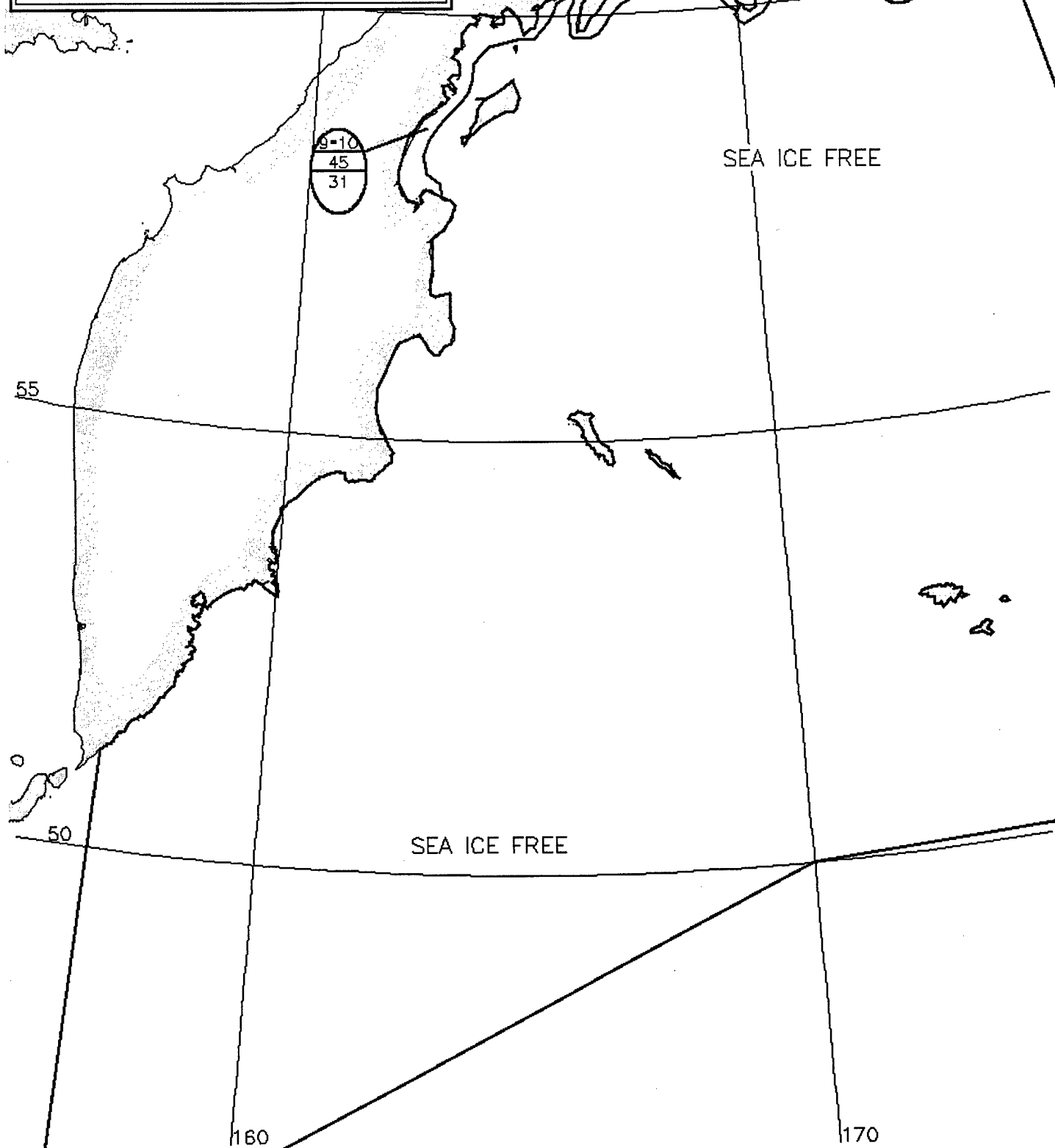
RECONNAISSANCE.....

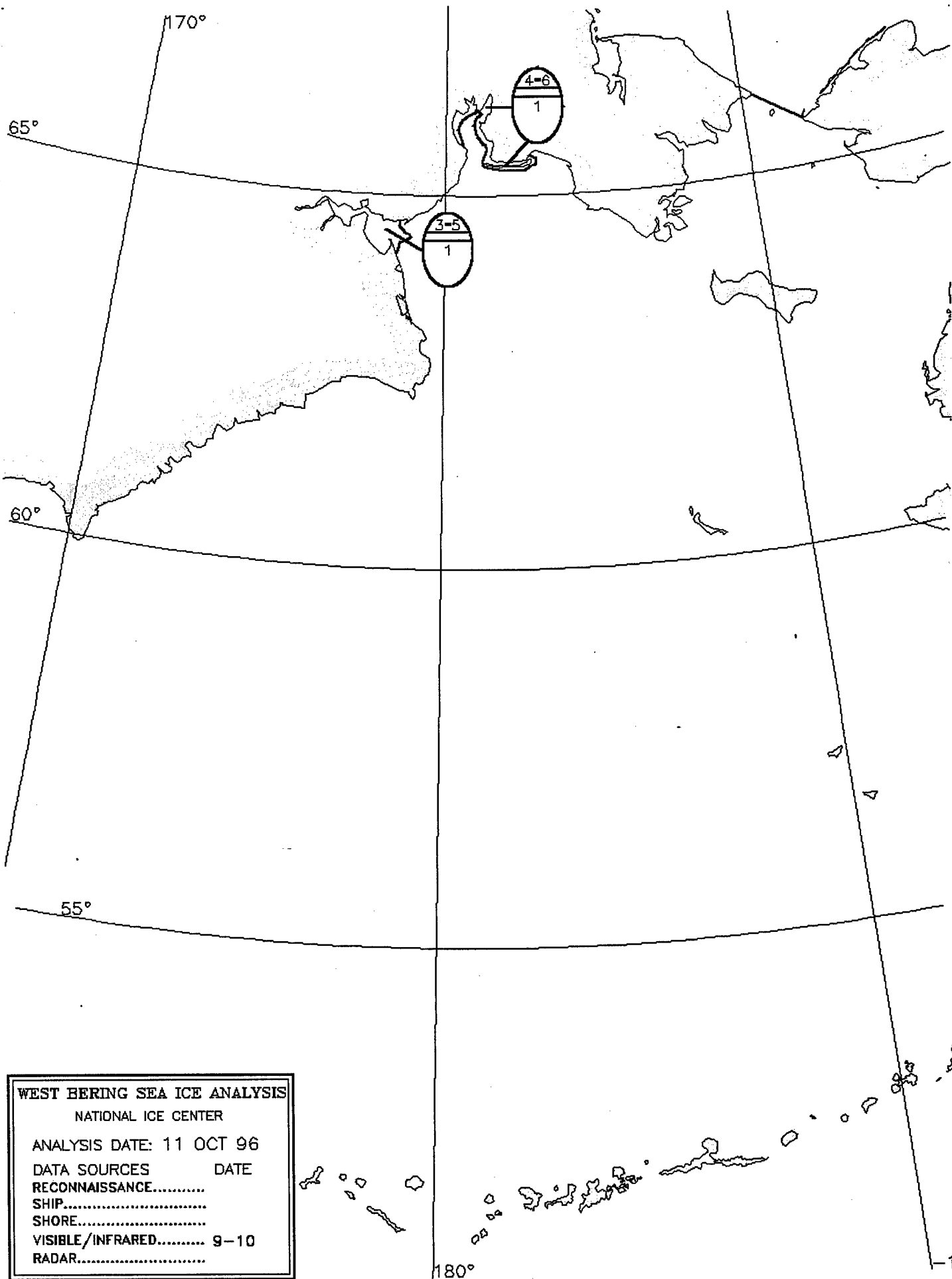
SHIP.....

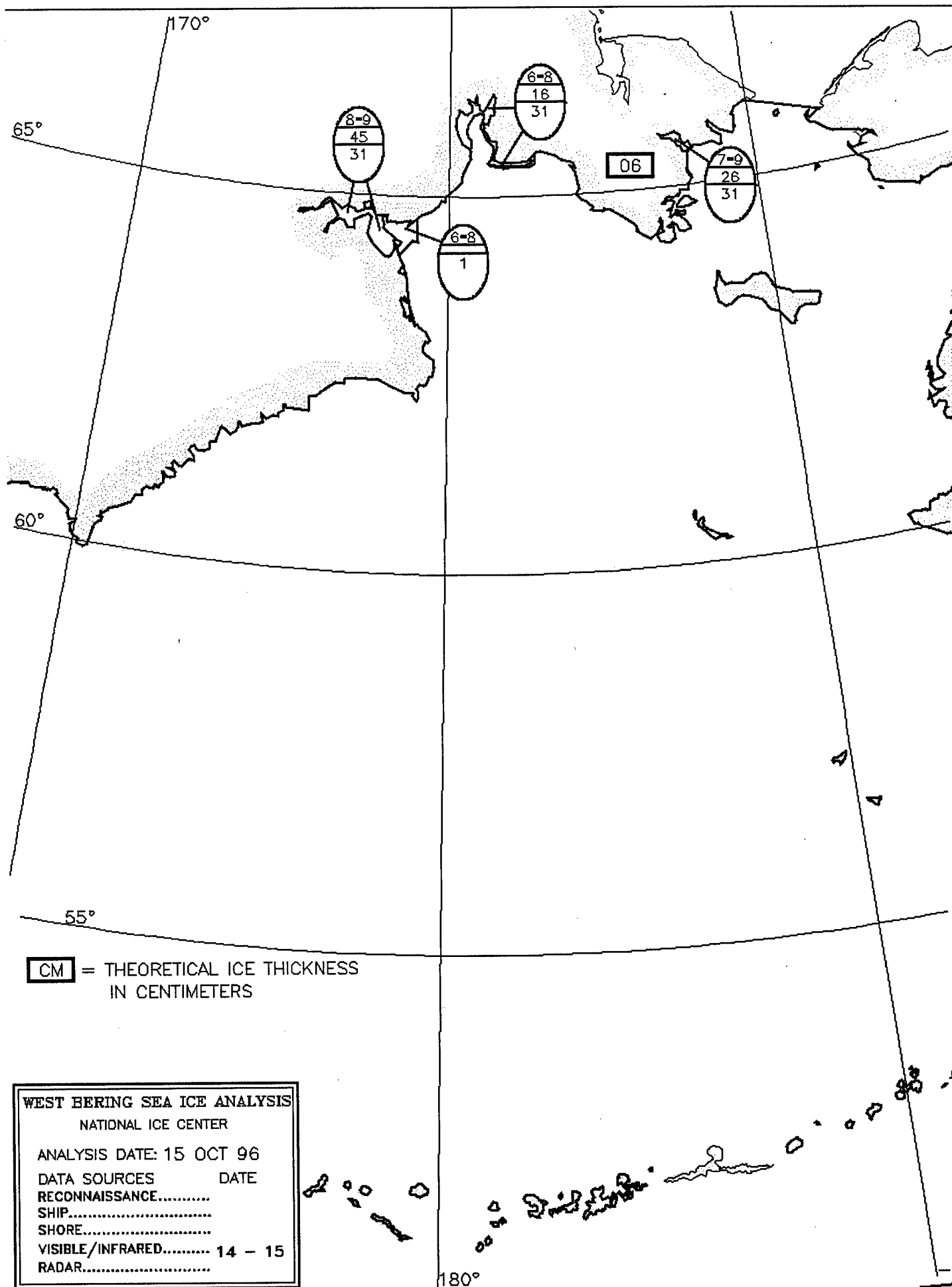
SHORE.....

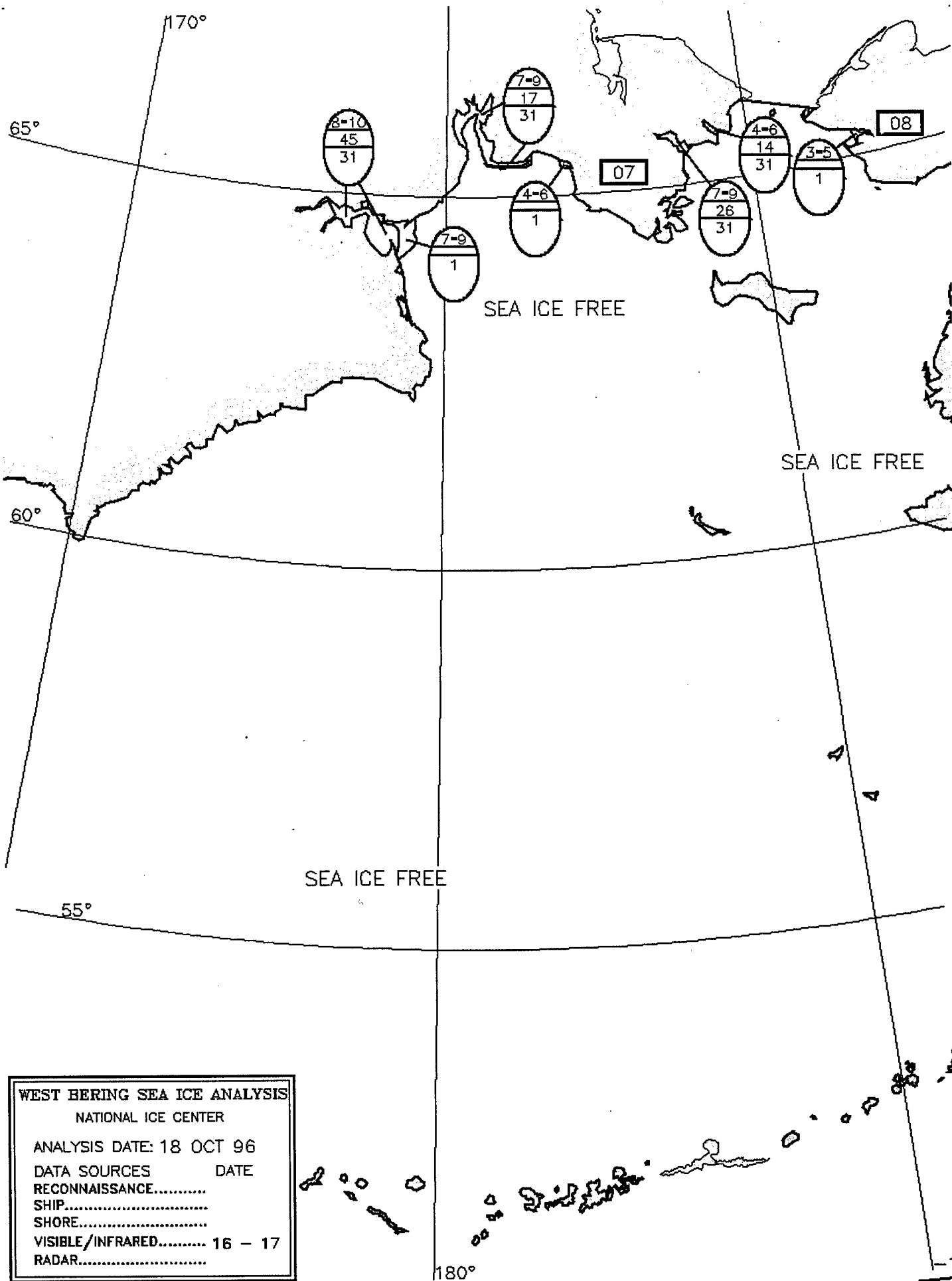
VISIBLE/INFRARED..... 26 DEC 96

RADAR.....

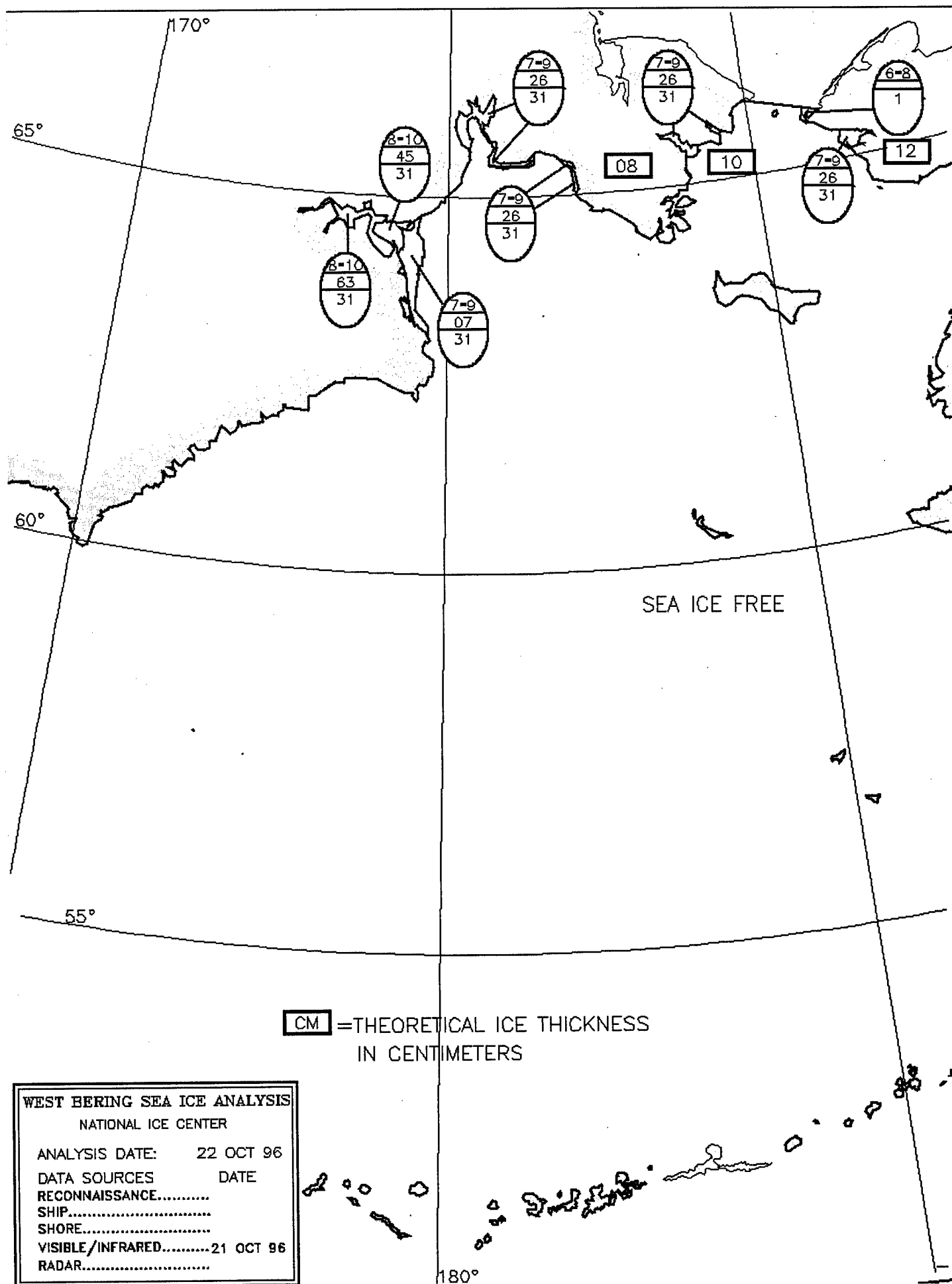


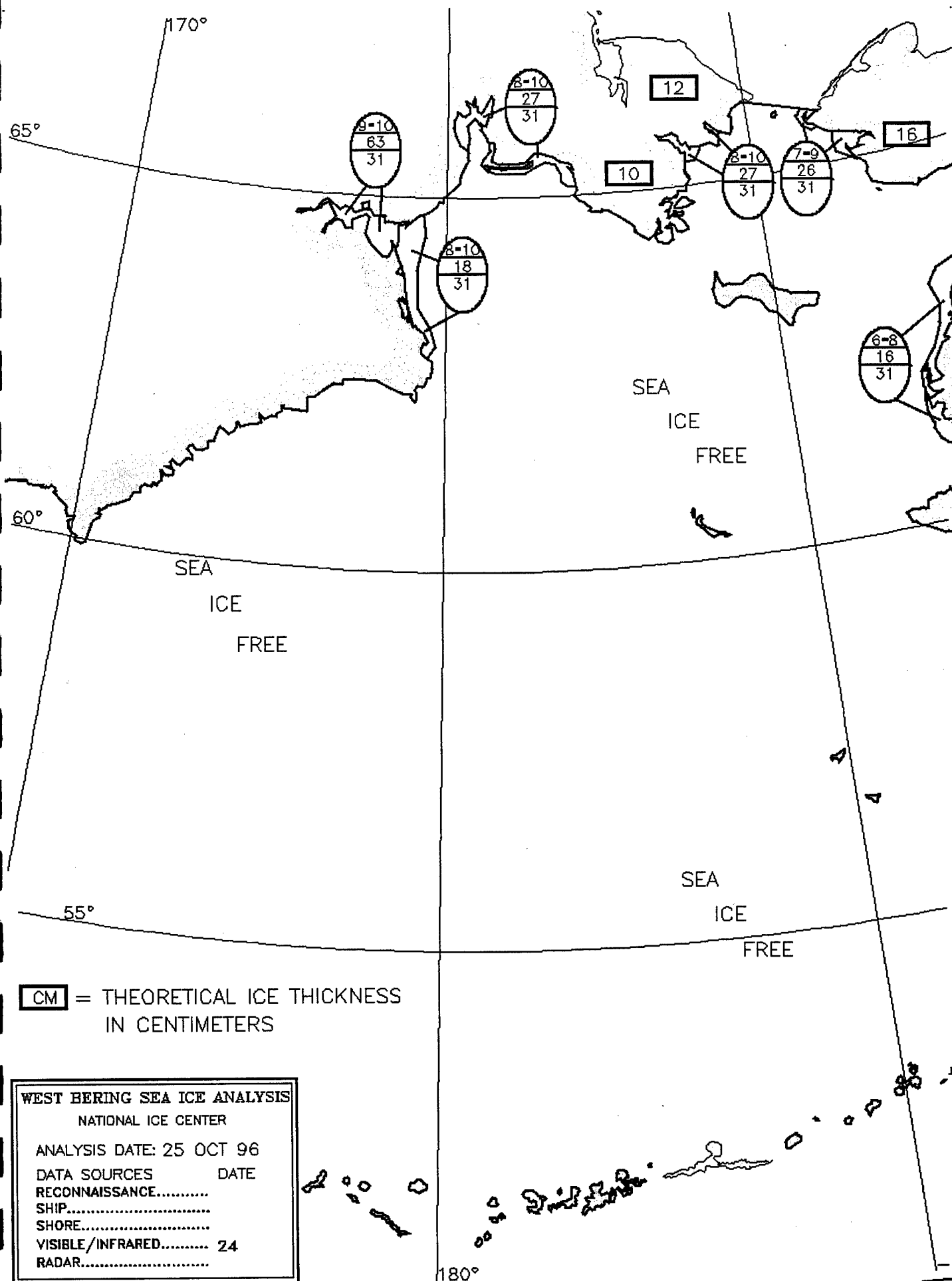


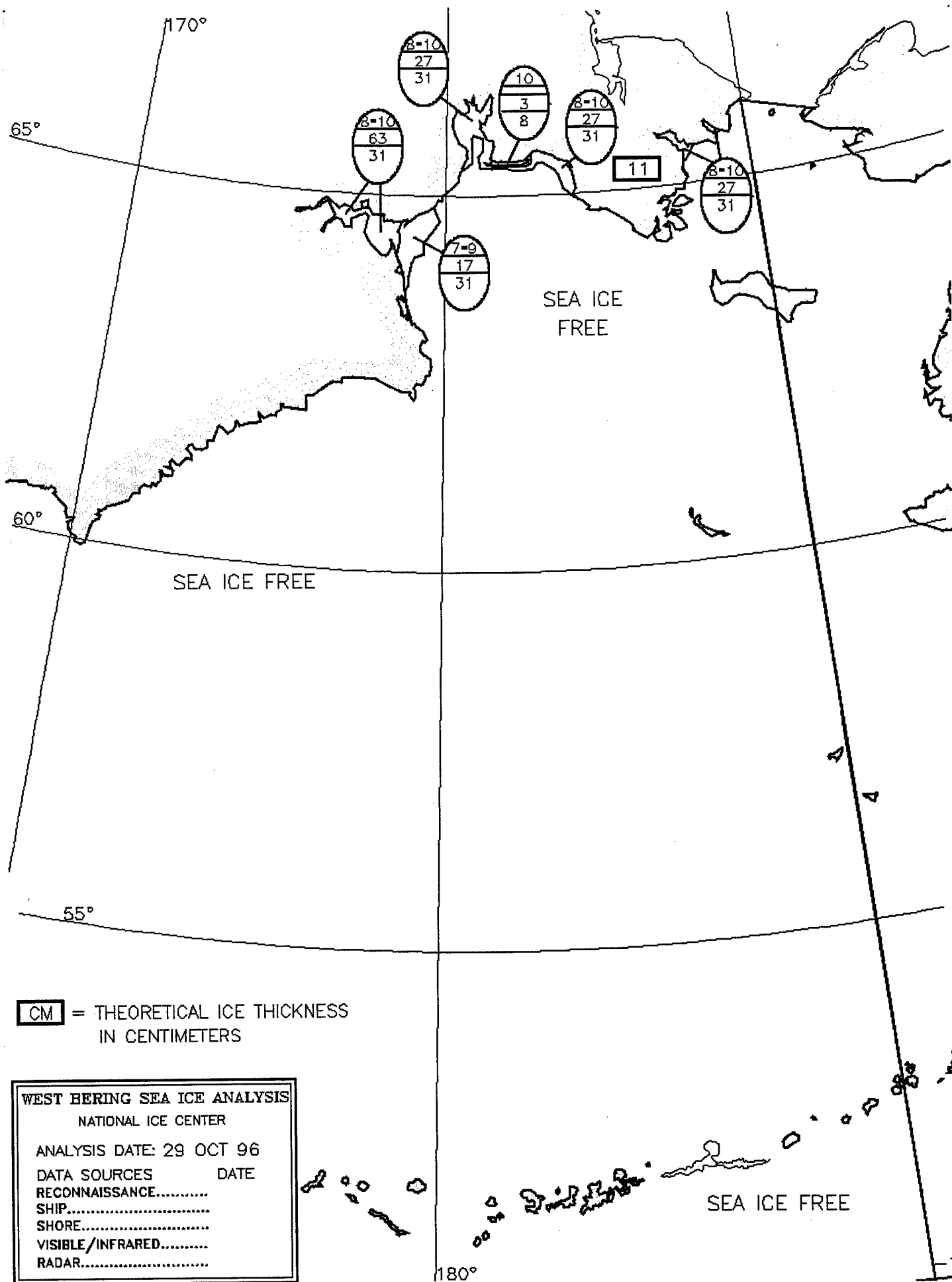


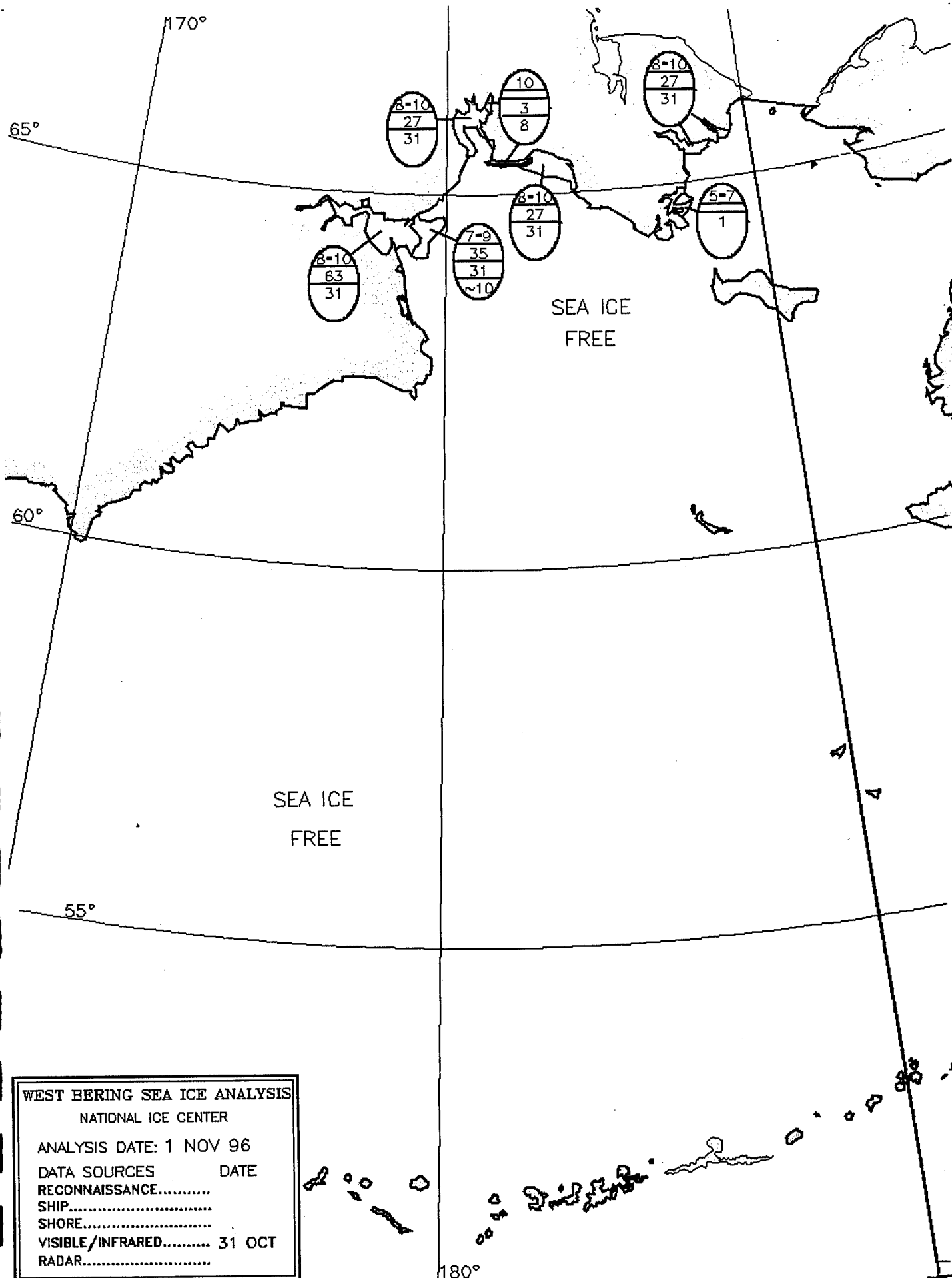


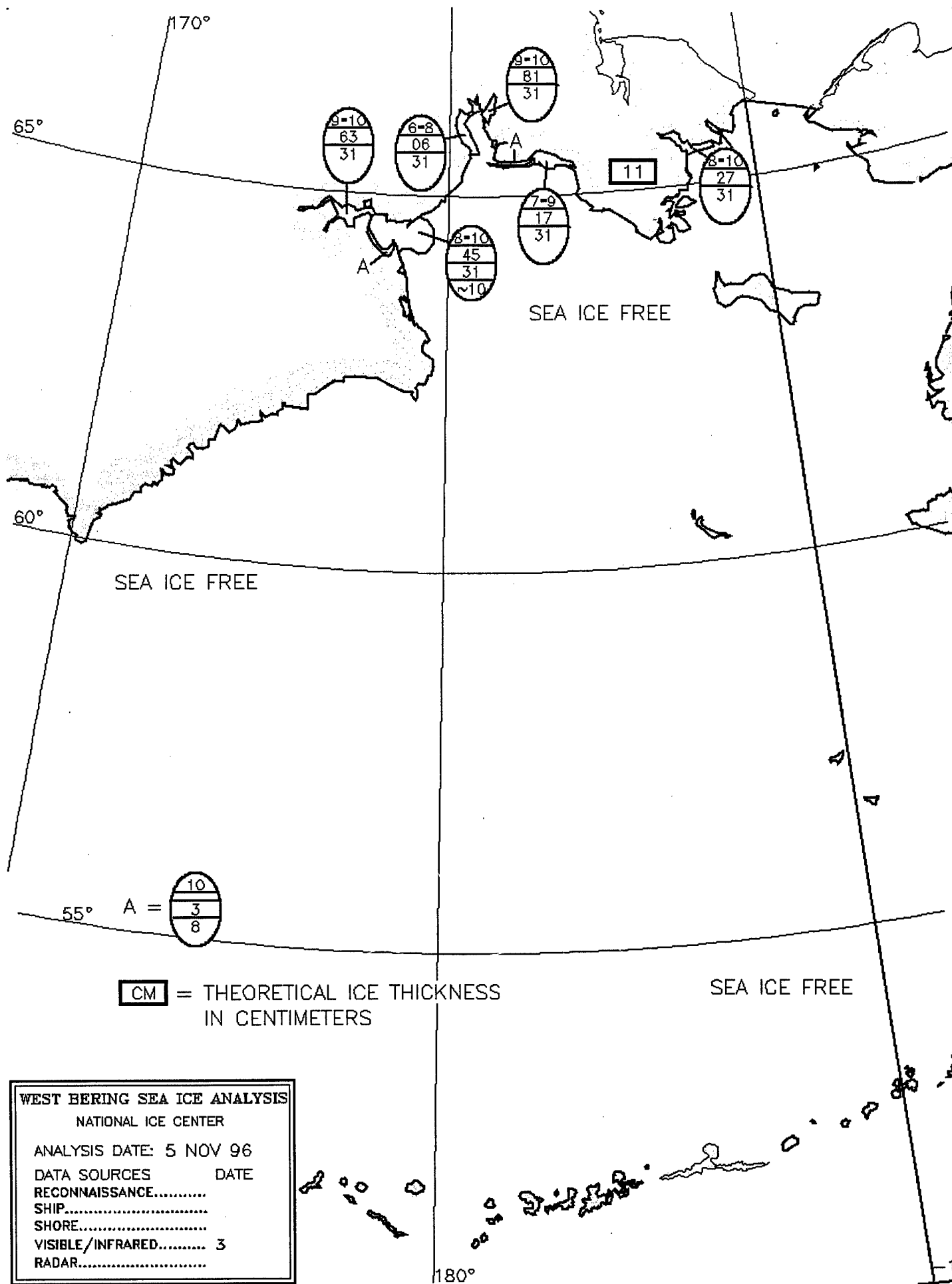
WEST HERING SEA ICE ANALYSIS
NATIONAL ICE CENTER
ANALYSIS DATE: 18 OCT 96
DATA SOURCES DATE
RECONNAISSANCE.....
SHIP.....
SHORE.....
VISIBLE/INFRARED..... 16 - 17
RADAR.....

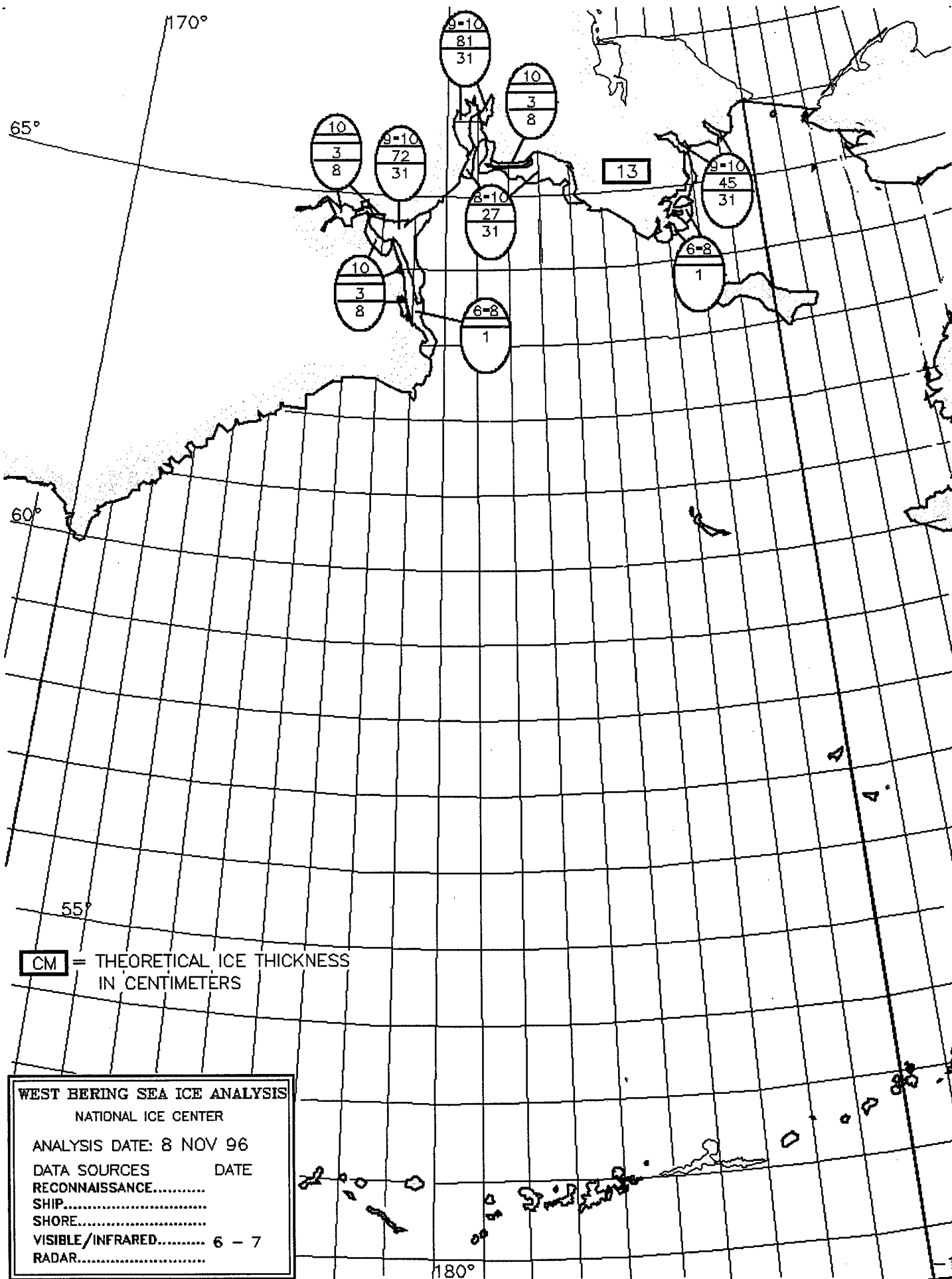


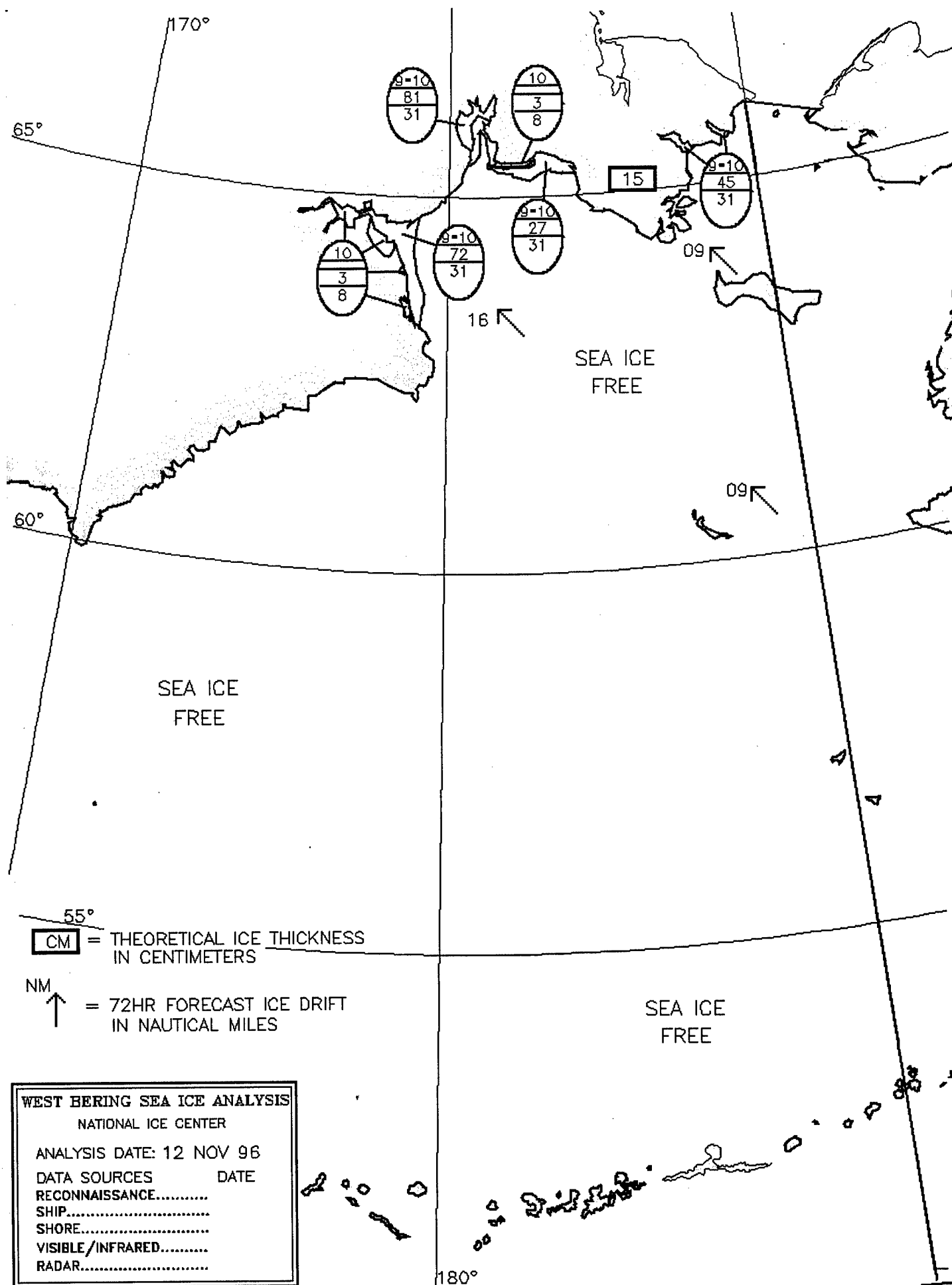


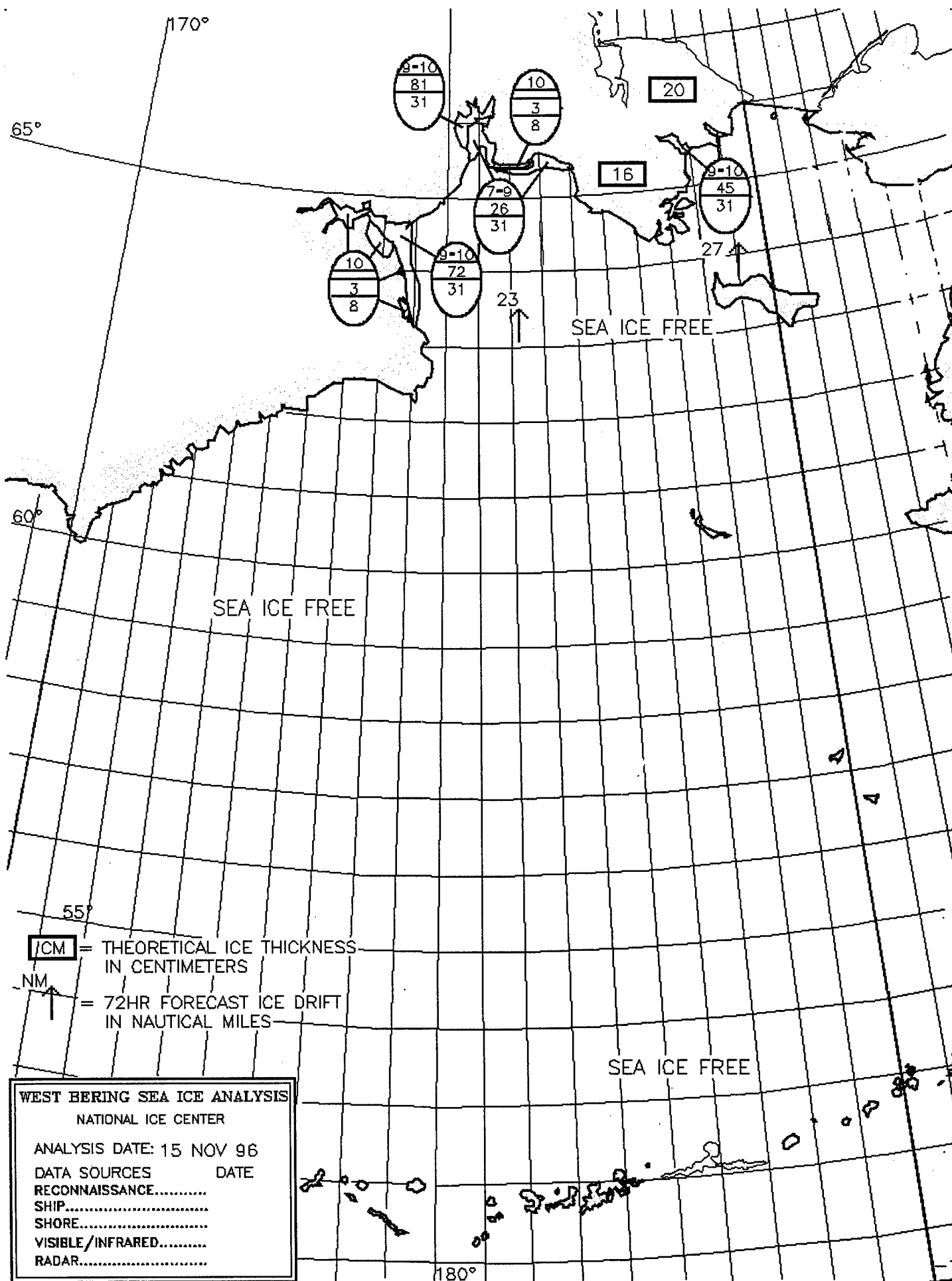


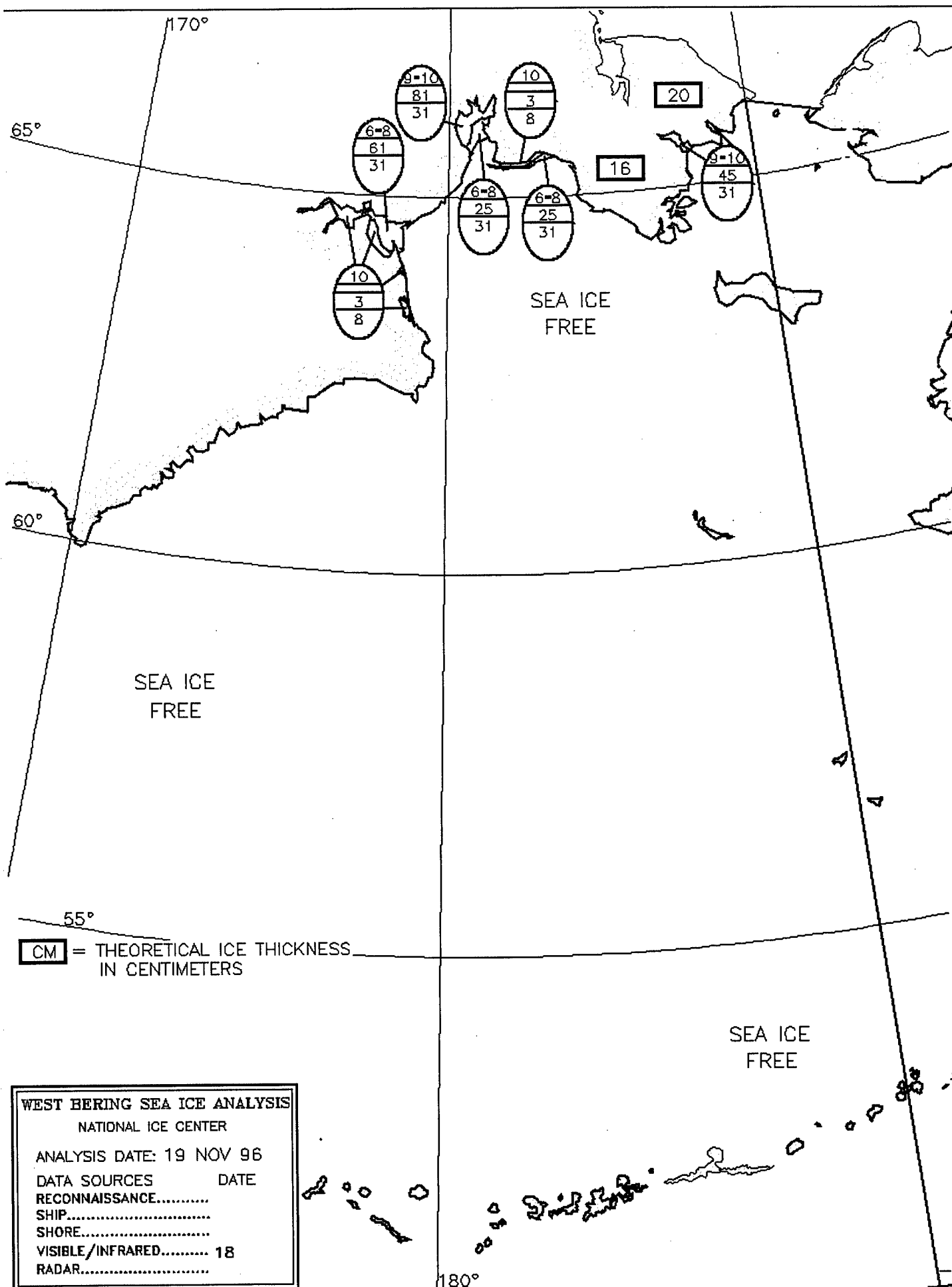


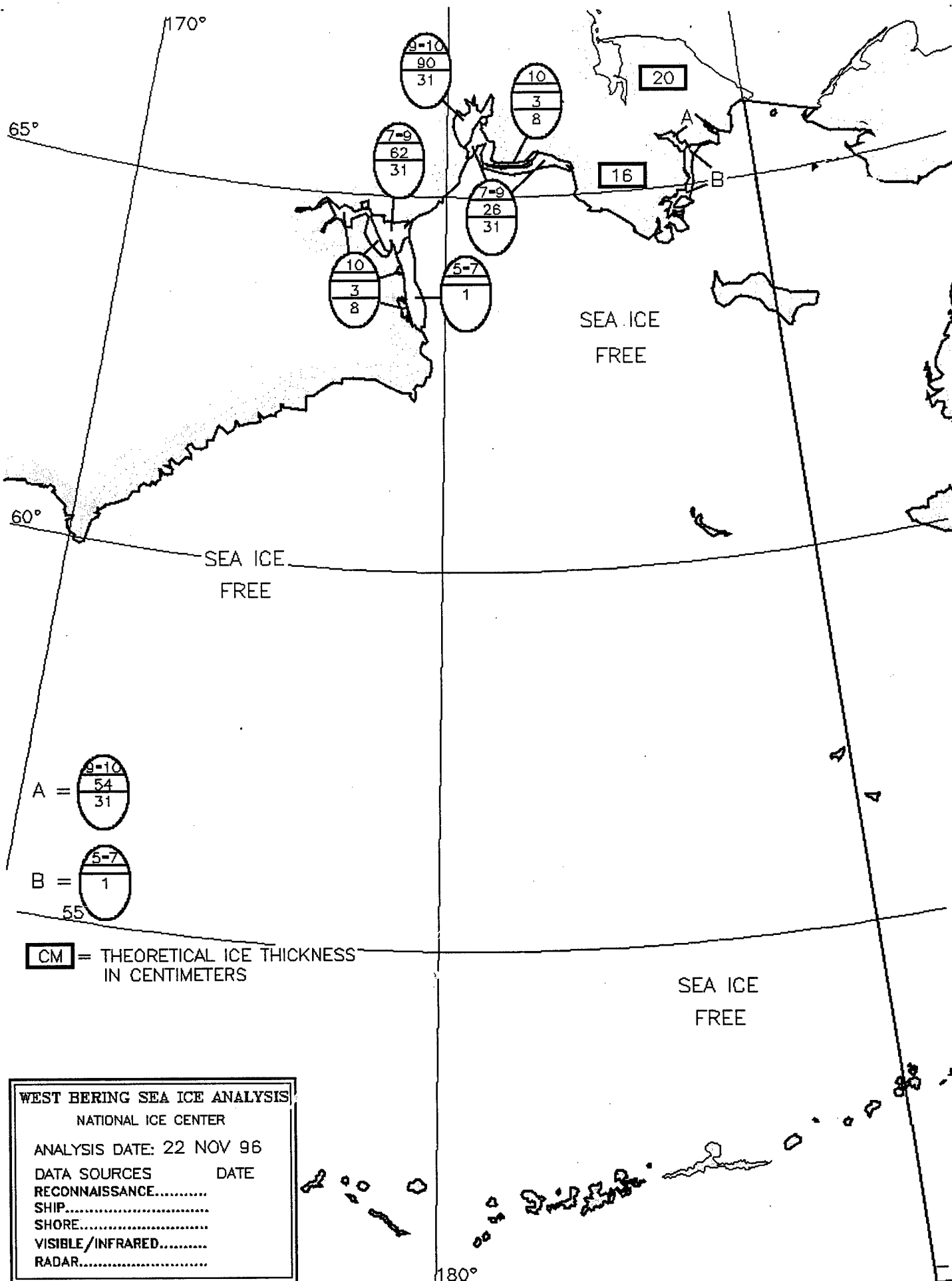


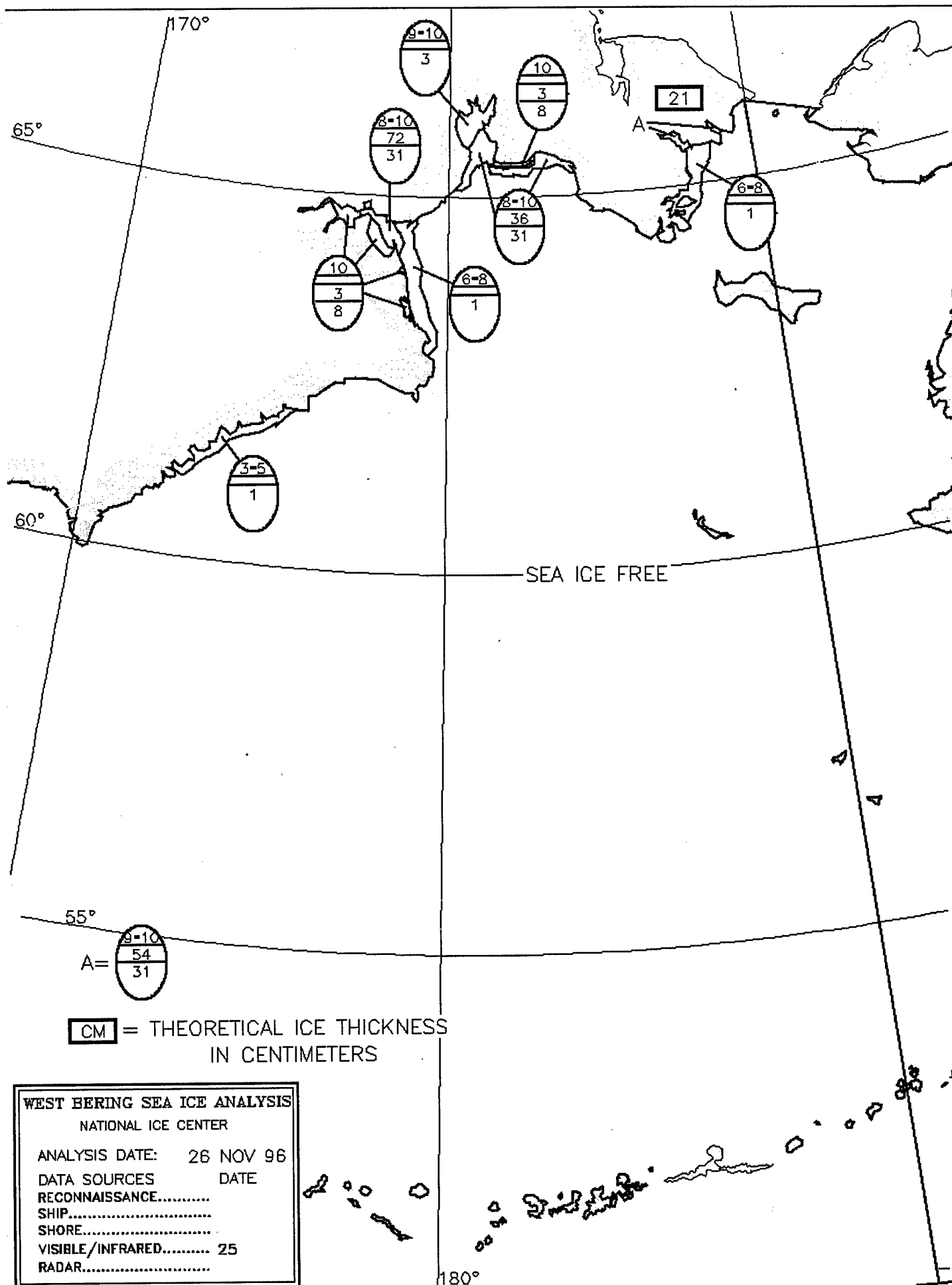


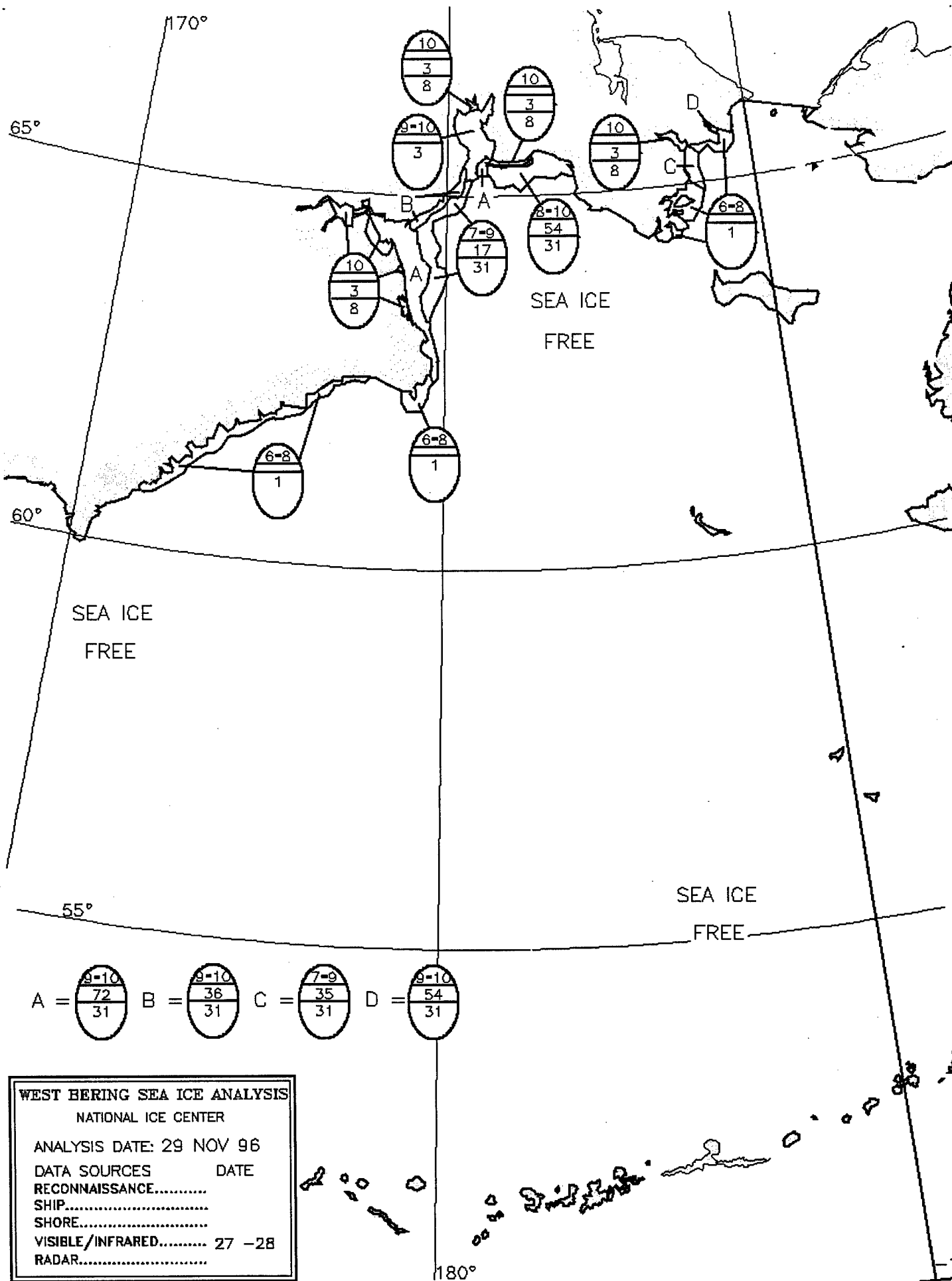


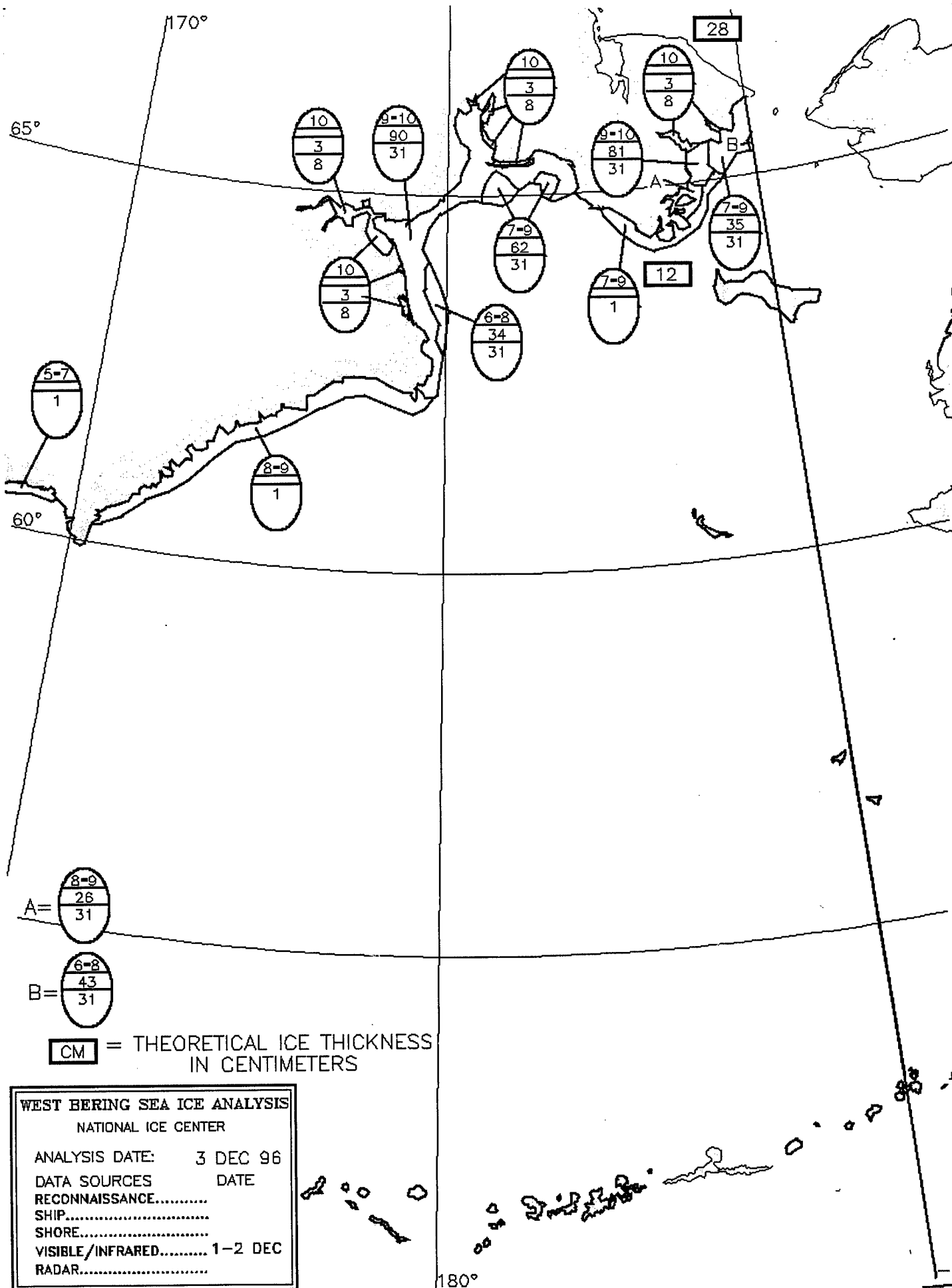


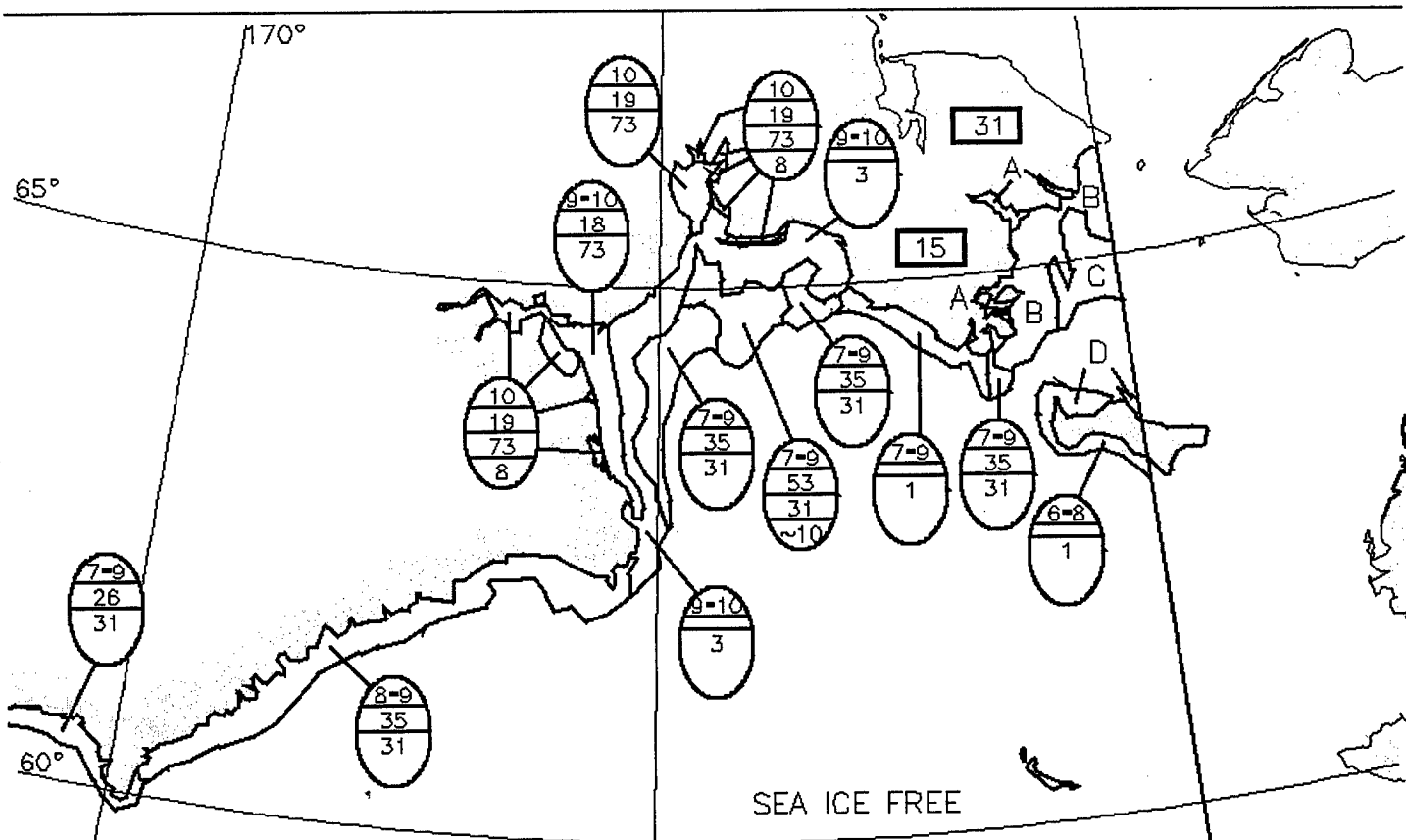












A = $\frac{10}{3}$
8

C = $\frac{6-8}{52}$
31
~10

B = $\frac{9-10}{45}$
31

D = $\frac{6-8}{1}$

[CM] = THEORETICAL ICE THICKNESS
IN CENTIMETERS

WEST BERING SEA ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 6 DEC 96

DATA SOURCES DATE

RECONNAISSANCE.....

SHIP.....

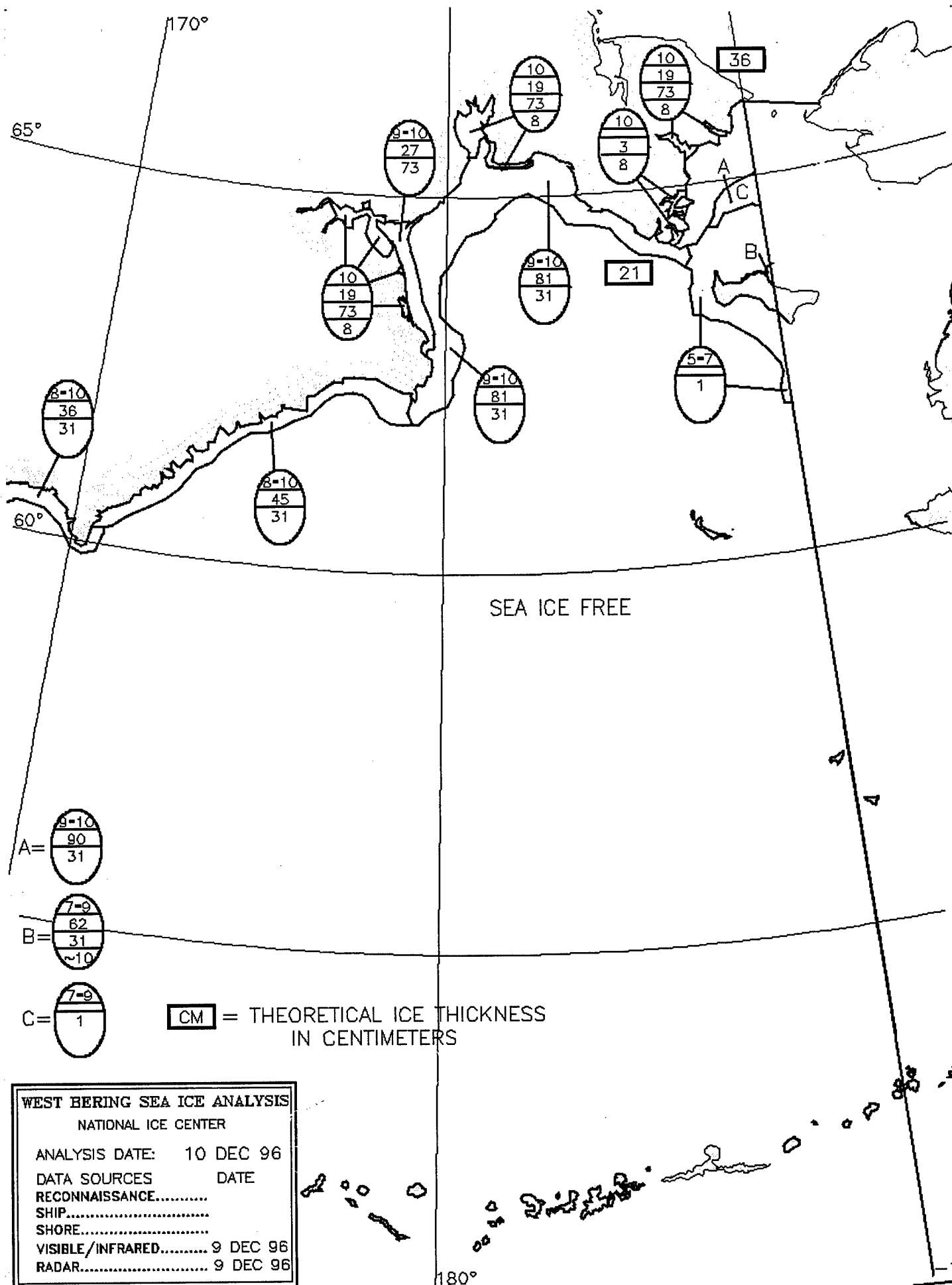
SHORE.....

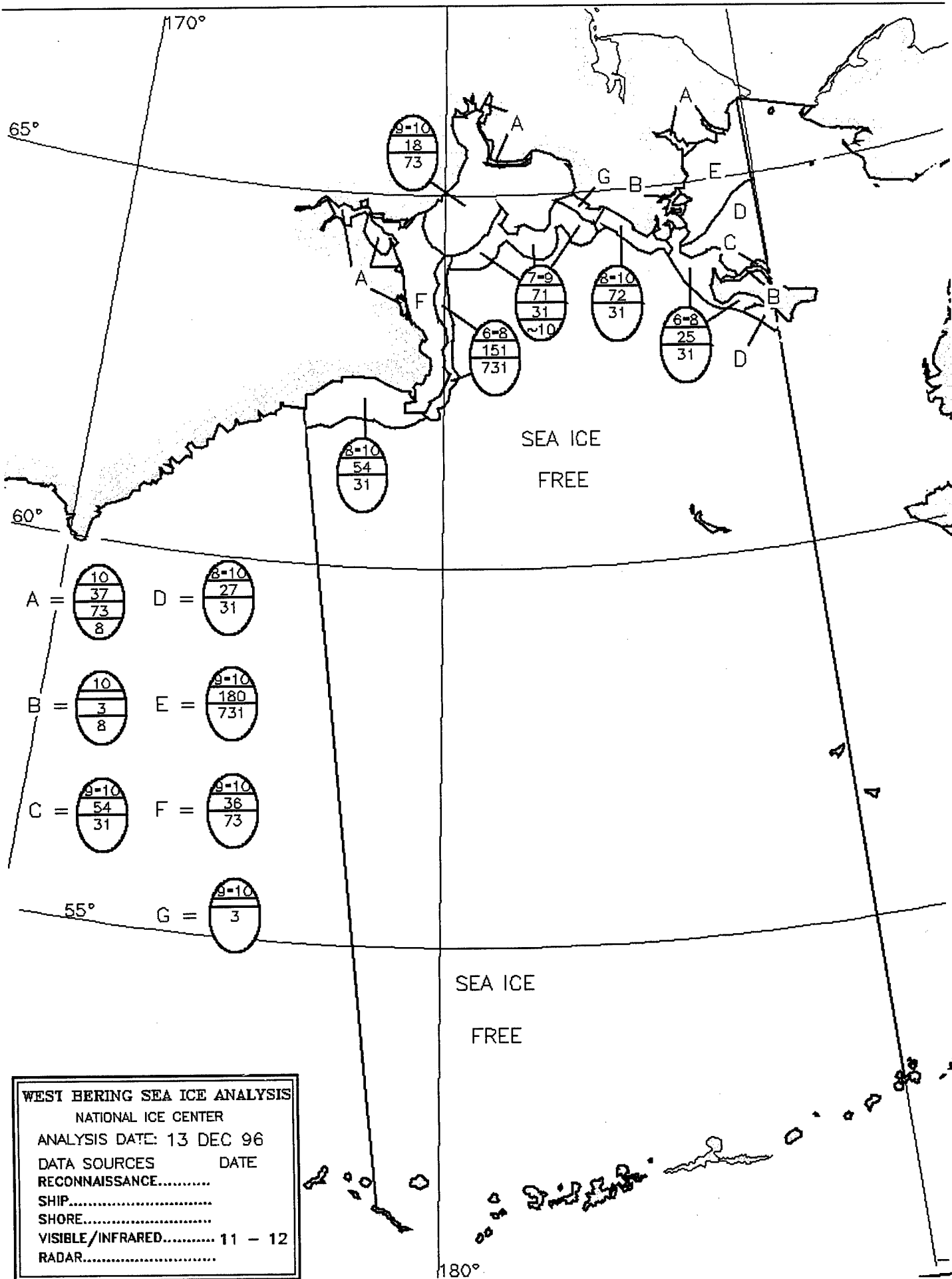
VISIBLE/INFRARED..... 5 DEC 96

RADAR.....

180°

-1





WEST HERING SEA ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 13 DEC 96

DATA SOURCES DATE

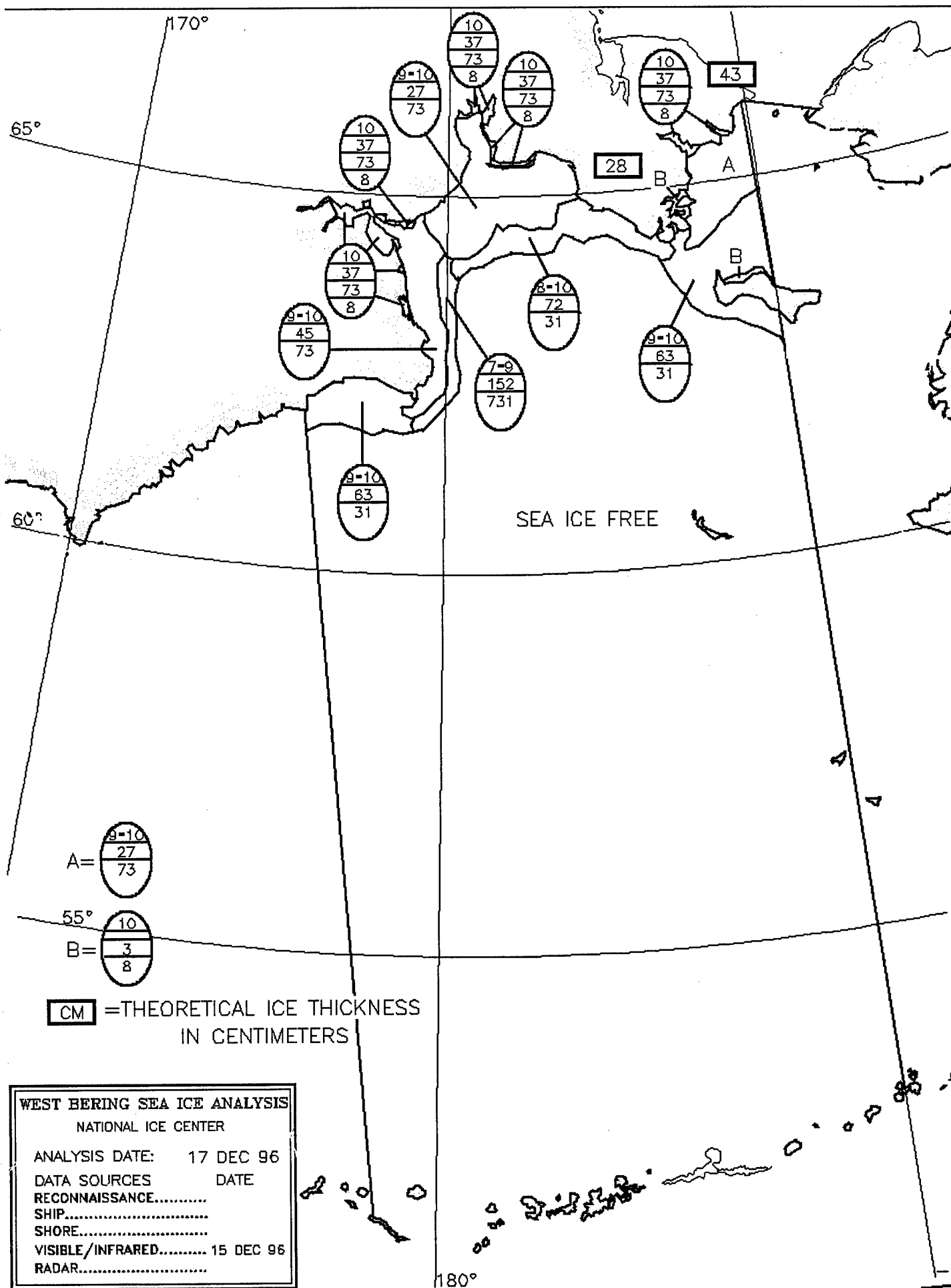
RECONNAISSANCE.....

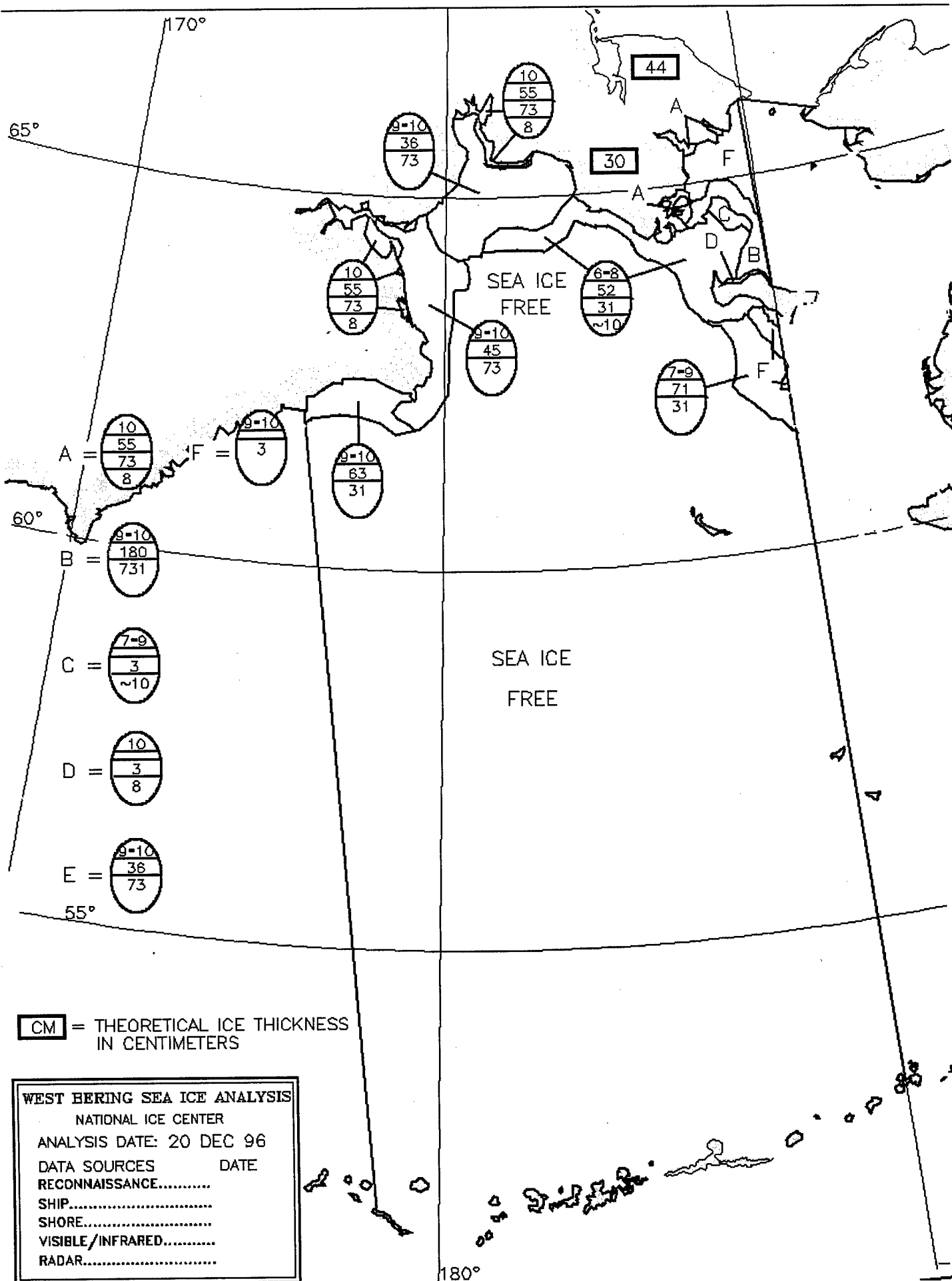
SHIP.....

SHORE.....

VISIBLE/INFRARED..... 11 - 12

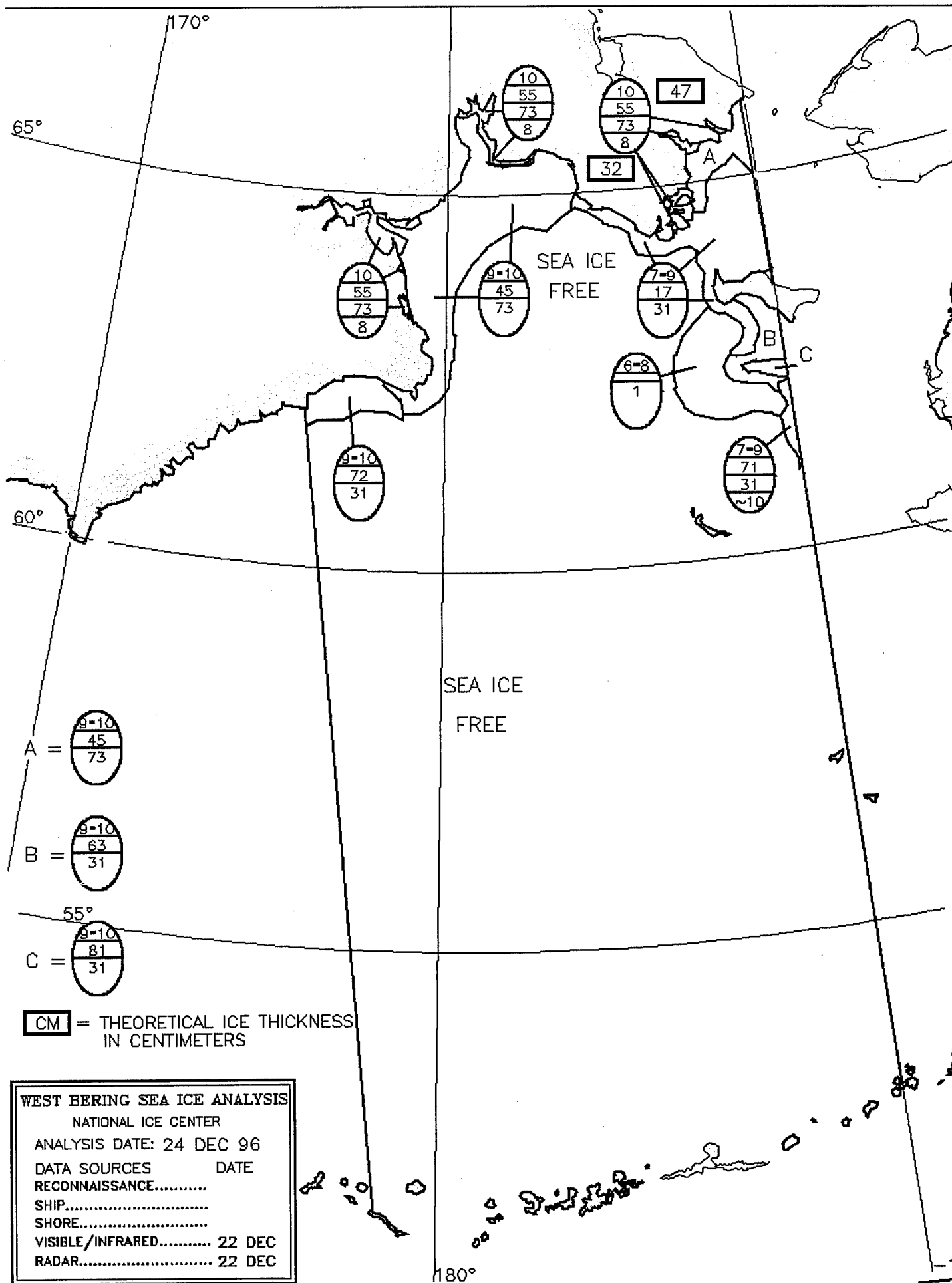
RADAR.....

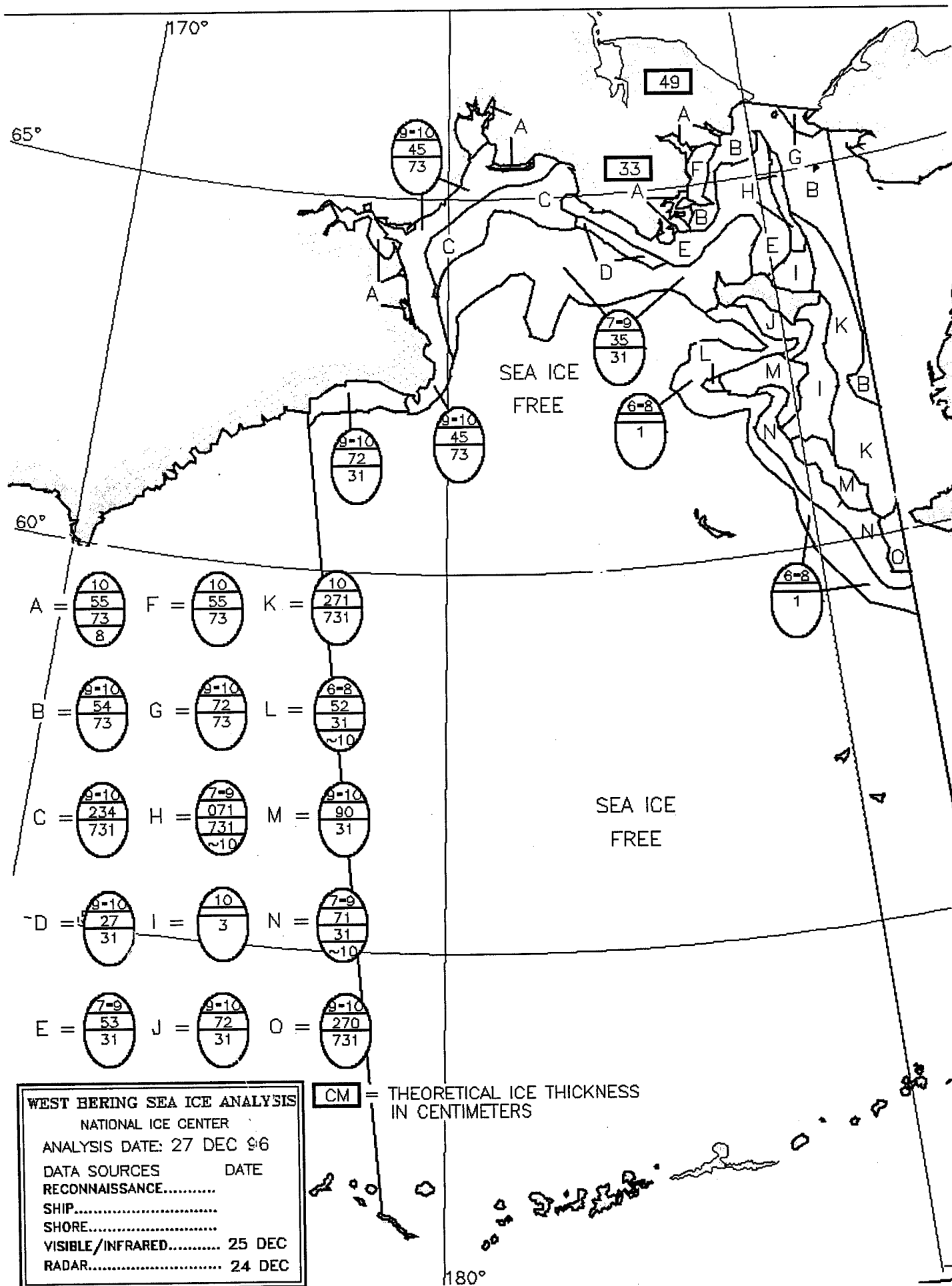


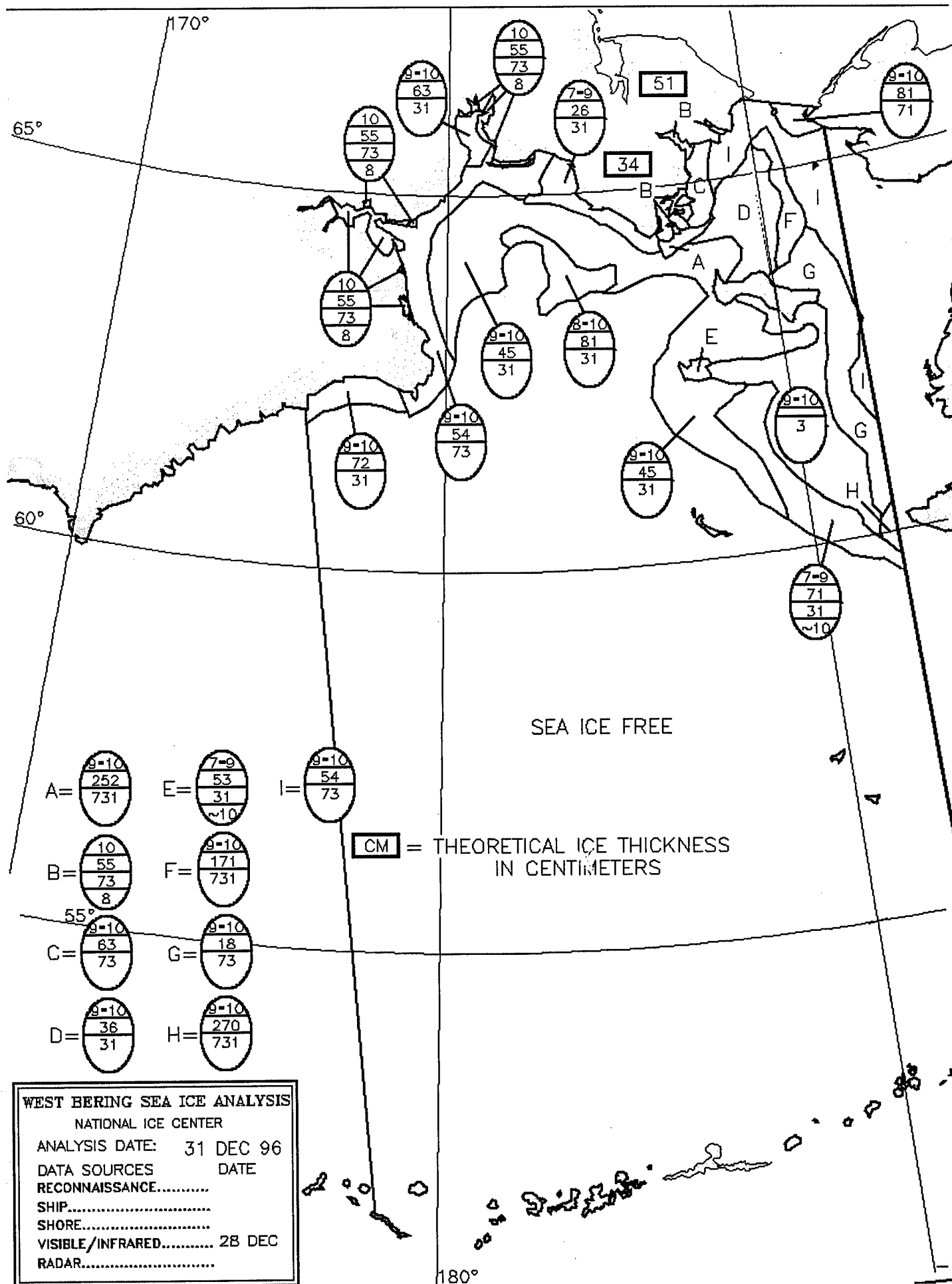


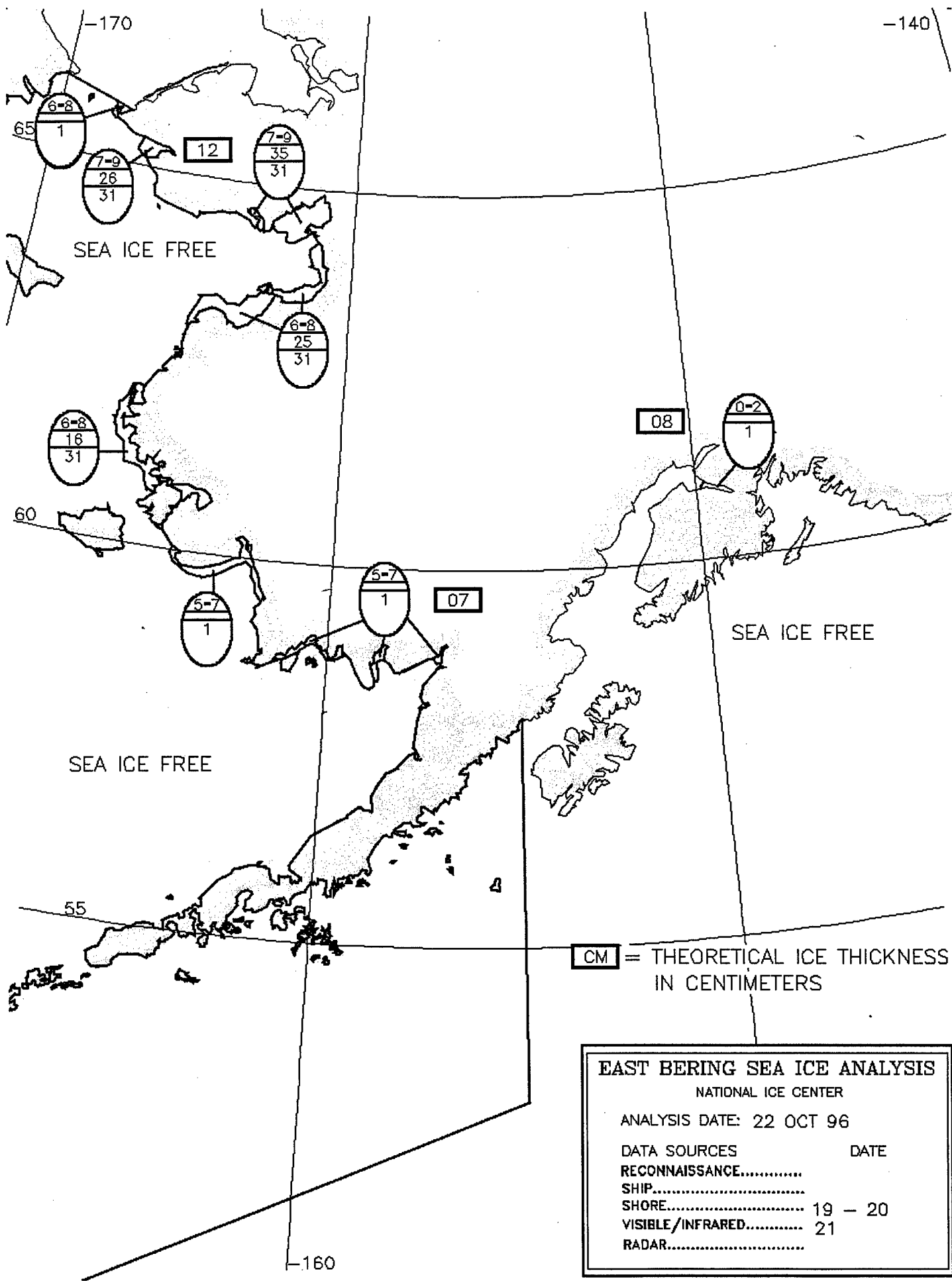
CM = THEORETICAL ICE THICKNESS
IN CENTIMETERS

WEST HERING SEA ICE ANALYSIS
 NATIONAL ICE CENTER
 ANALYSIS DATE: 20 DEC 96
 DATA SOURCES DATE
 RECONNAISSANCE.....
 SHIP.....
 SHORE.....
 VISIBLE/INFRARED.....
 RADAR.....



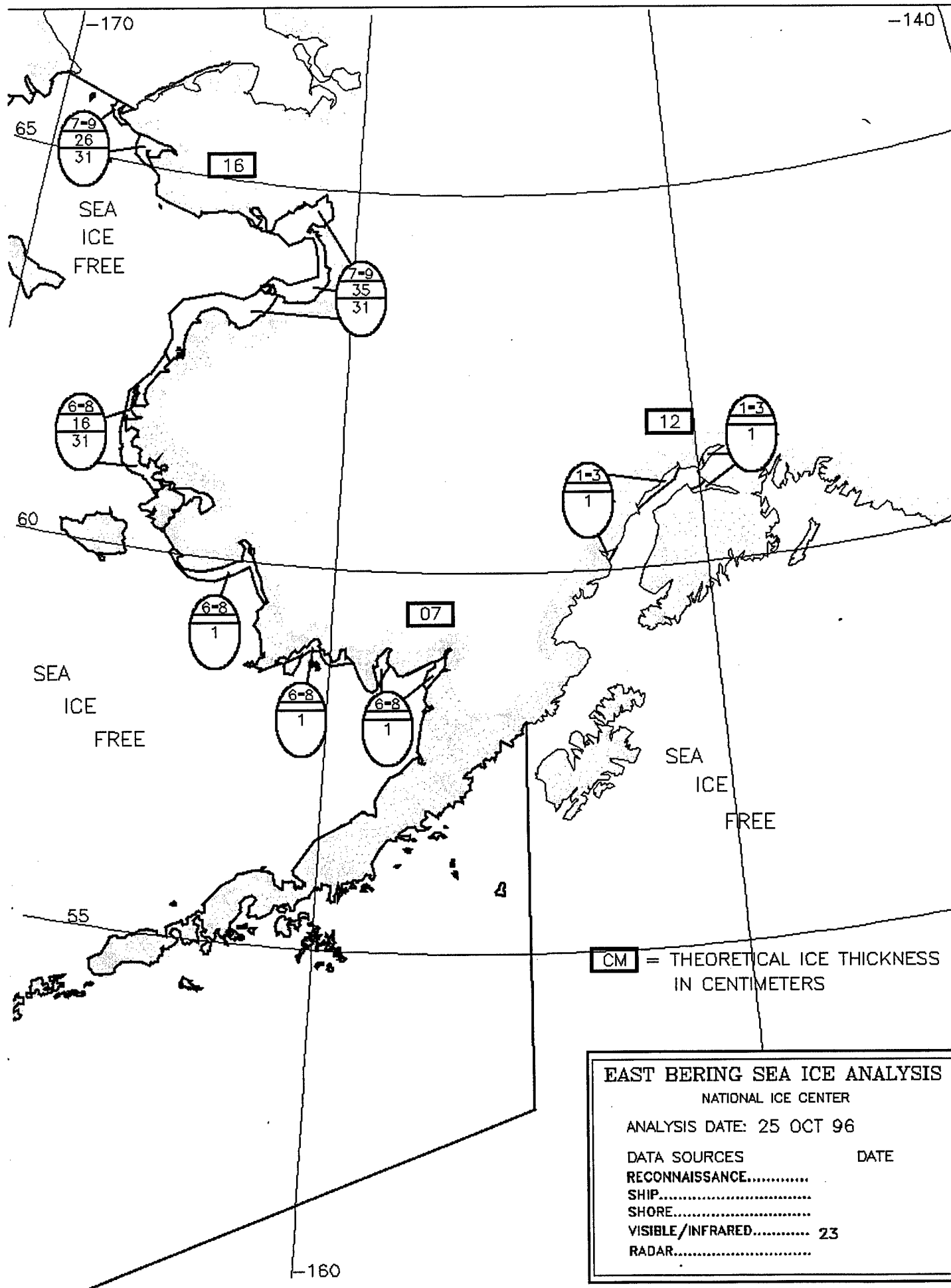


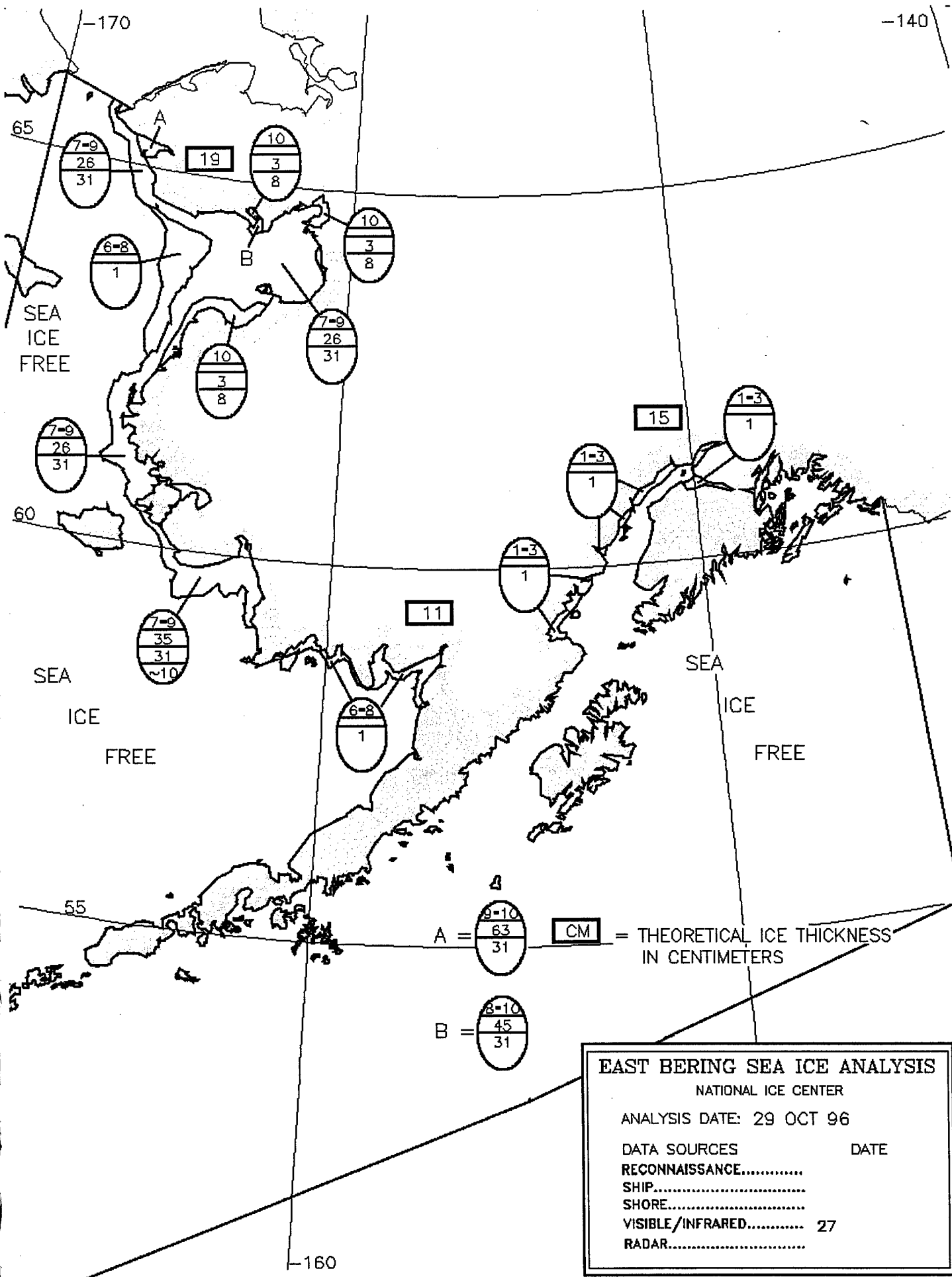




CM = THEORETICAL ICE THICKNESS
IN CENTIMETERS

EAST BERING SEA ICE ANALYSIS	
NATIONAL ICE CENTER	
ANALYSIS DATE: 22 OCT 96	
DATA SOURCES	DATE
RECONNAISSANCE.....	
SHIP.....	
SHORE.....	19 - 20
VISIBLE/INFRARED.....	21
RADAR.....	



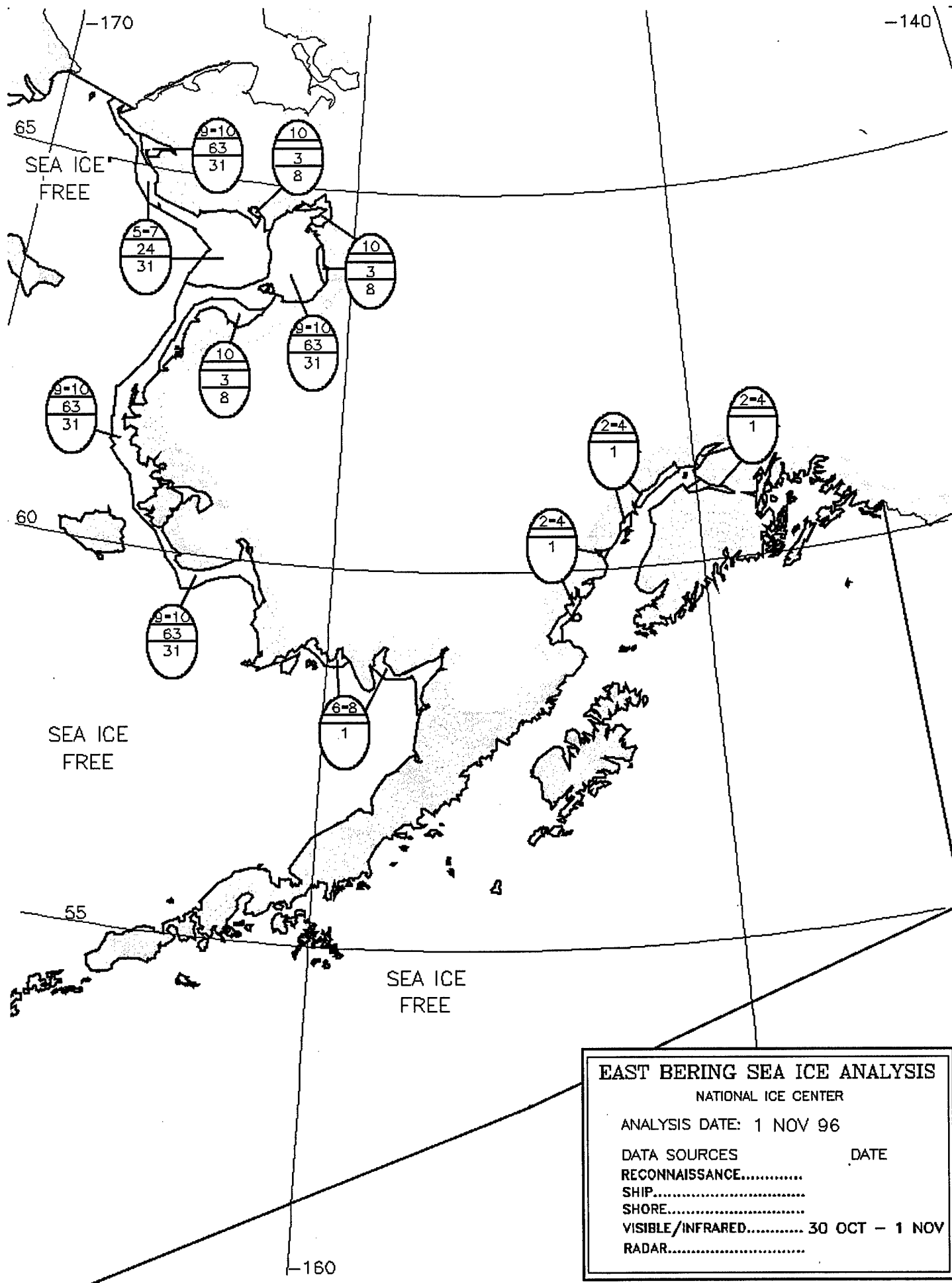


EAST BERING SEA ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 29 OCT 96

DATA SOURCES	DATE
RECONNAISSANCE.....	
SHIP.....	
SHORE.....	
VISIBLE/INFRARED.....	27
RADAR.....	



EAST BERING SEA ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 1 NOV 96

DATA SOURCES DATE

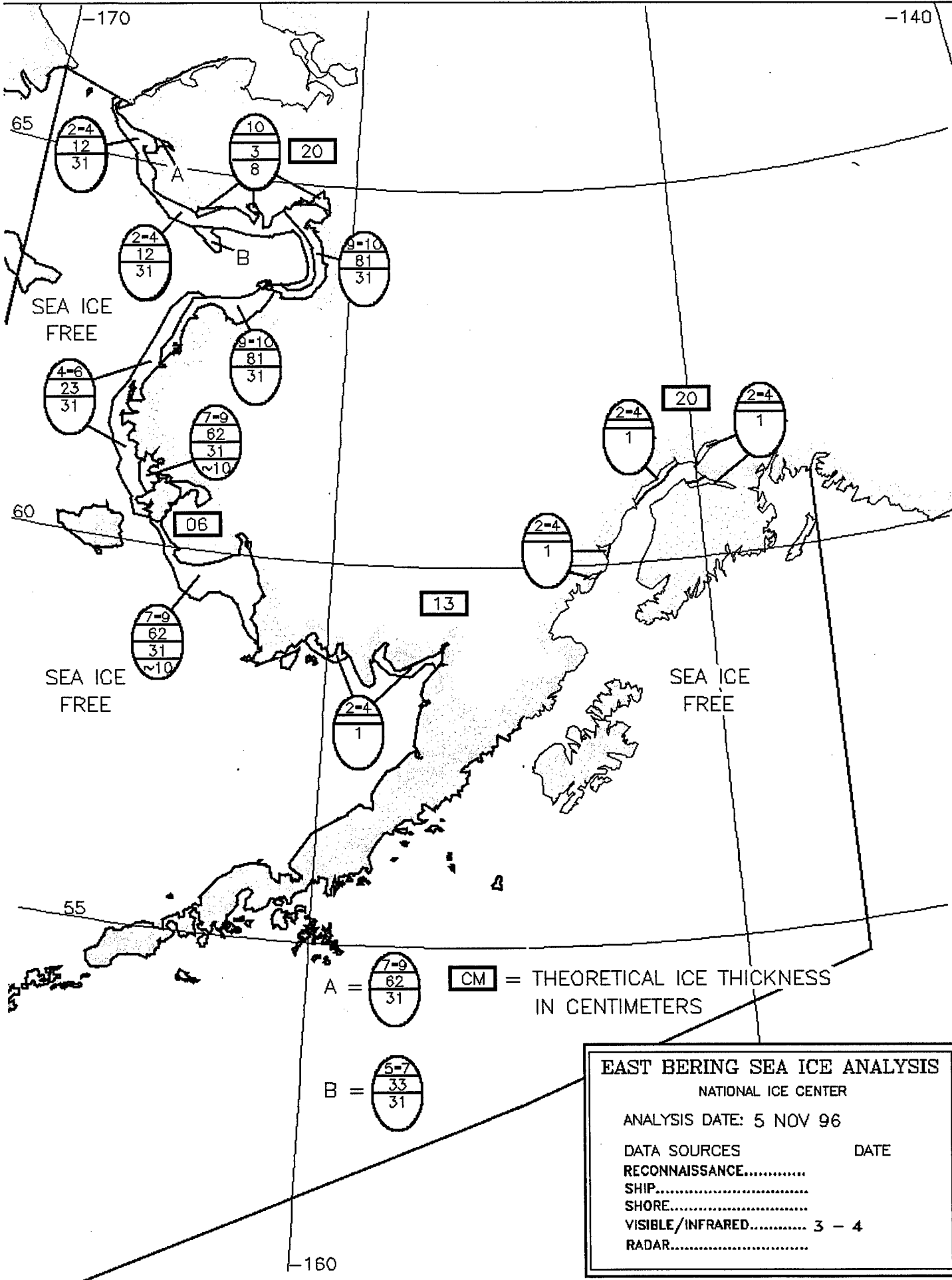
RECONNAISSANCE.....

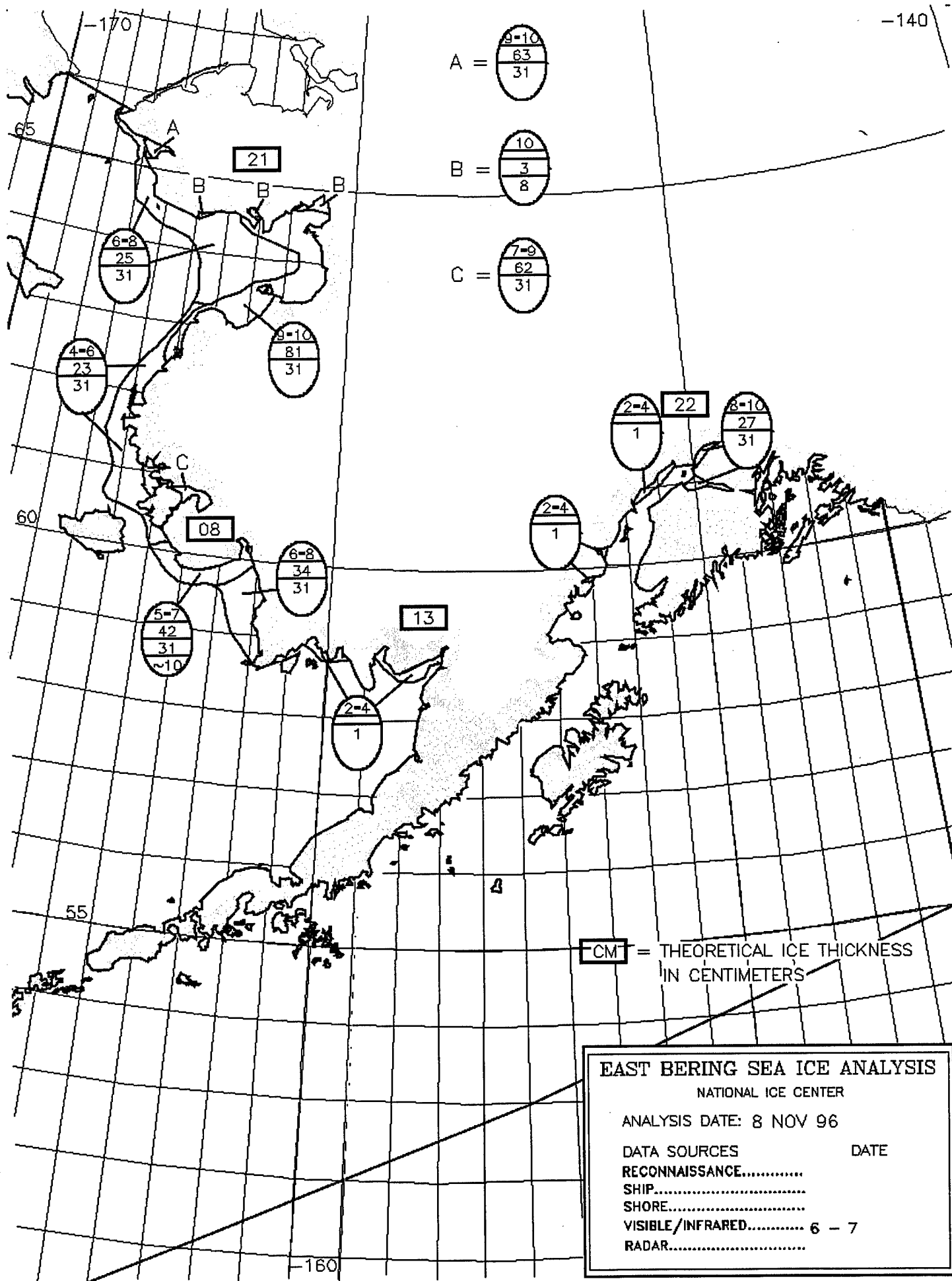
SHIP.....

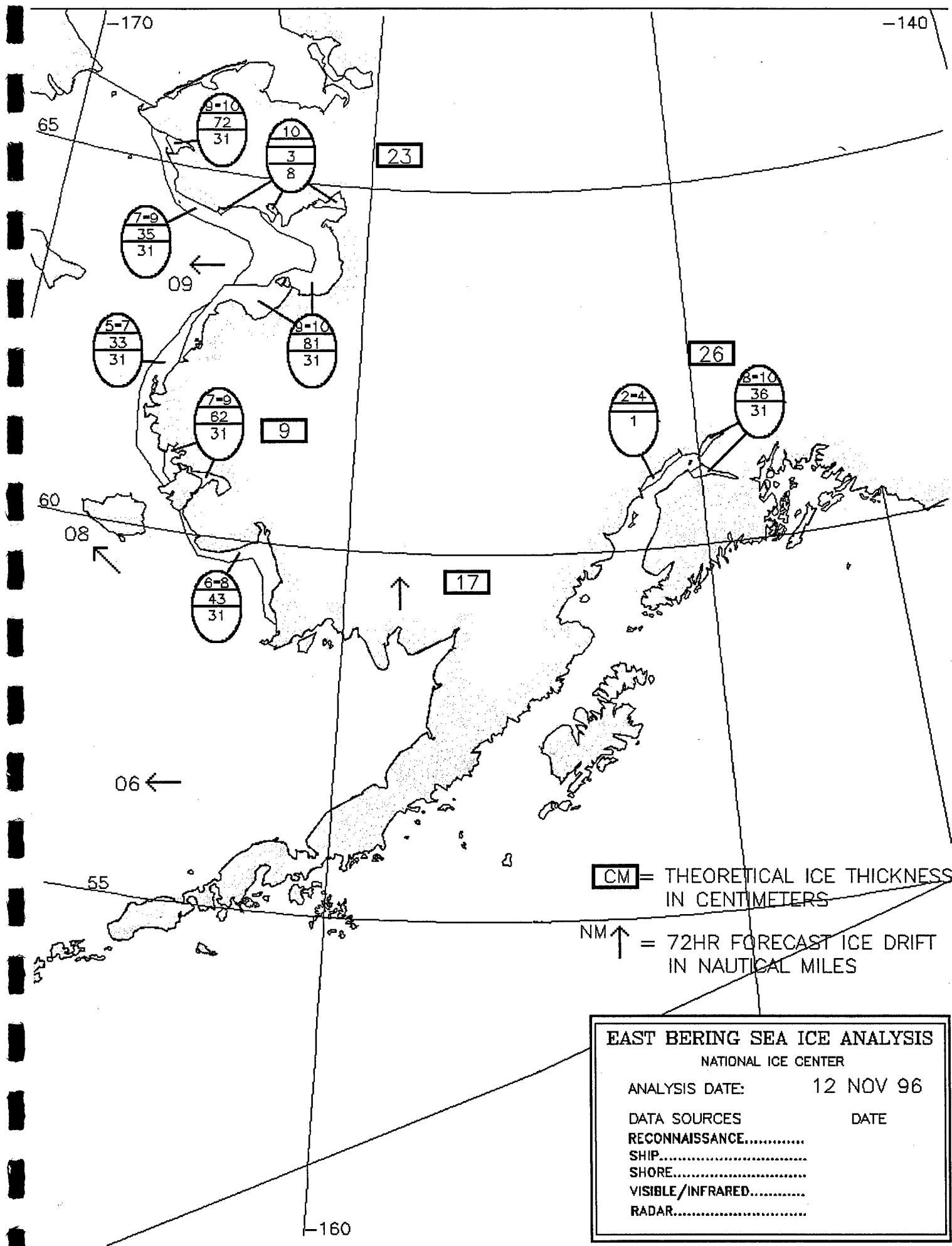
SHORE.....

VISIBLE/INFRARED..... 30 OCT - 1 NOV

RADAR.....







EAST BERING SEA ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 12 NOV 96

DATA SOURCES DATE

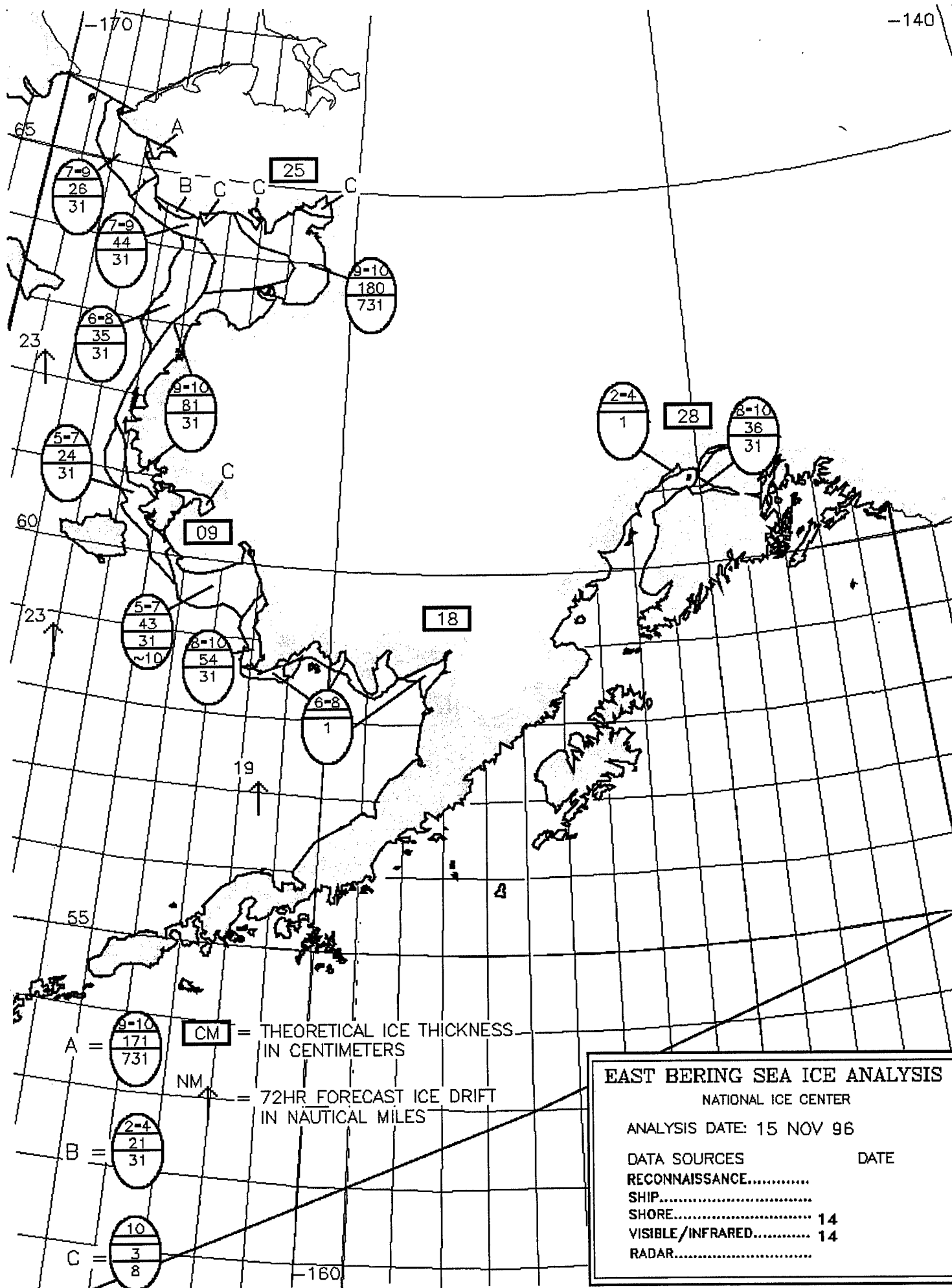
RECONNAISSANCE.....

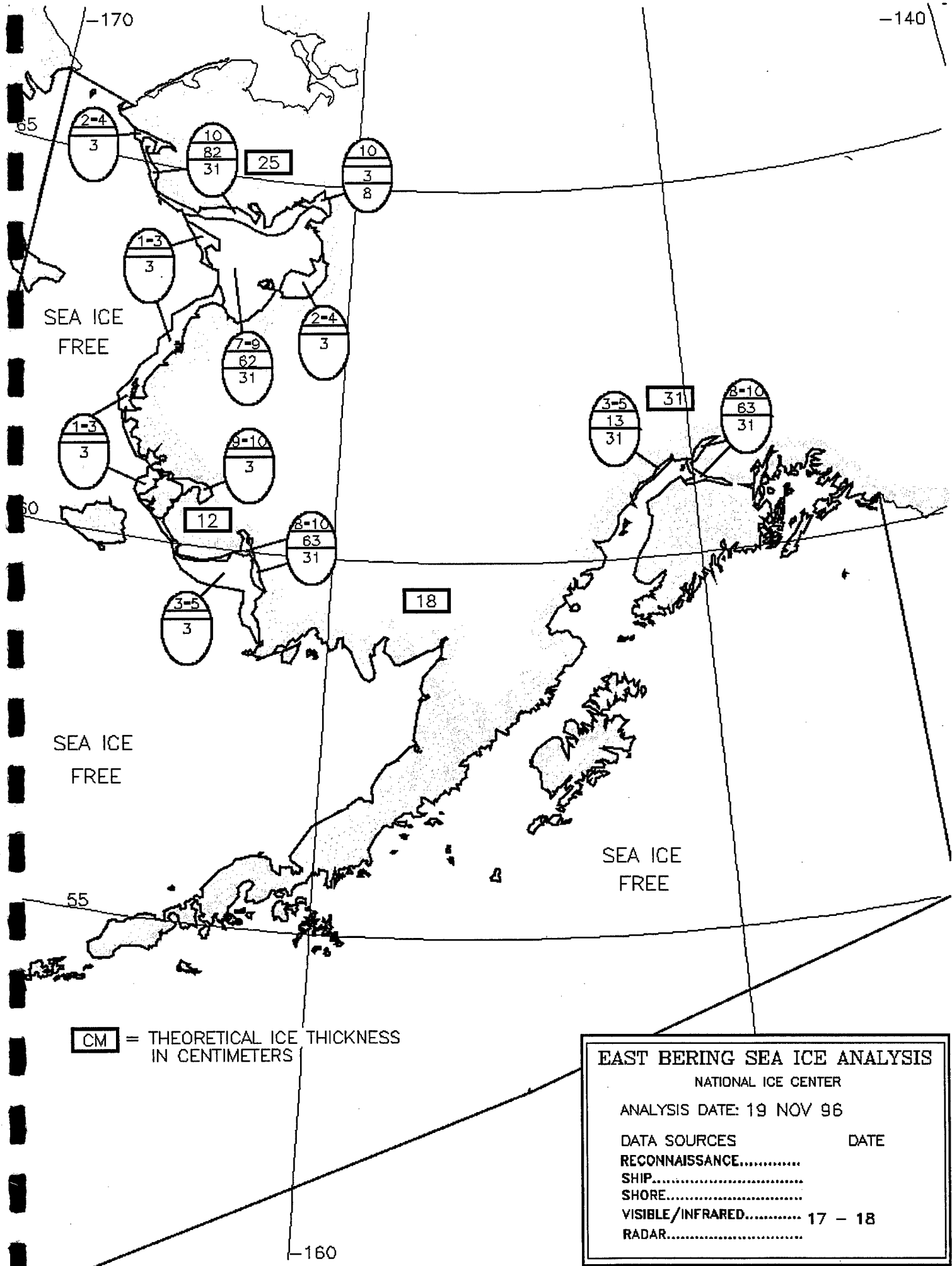
SHIP.....

SHORE.....

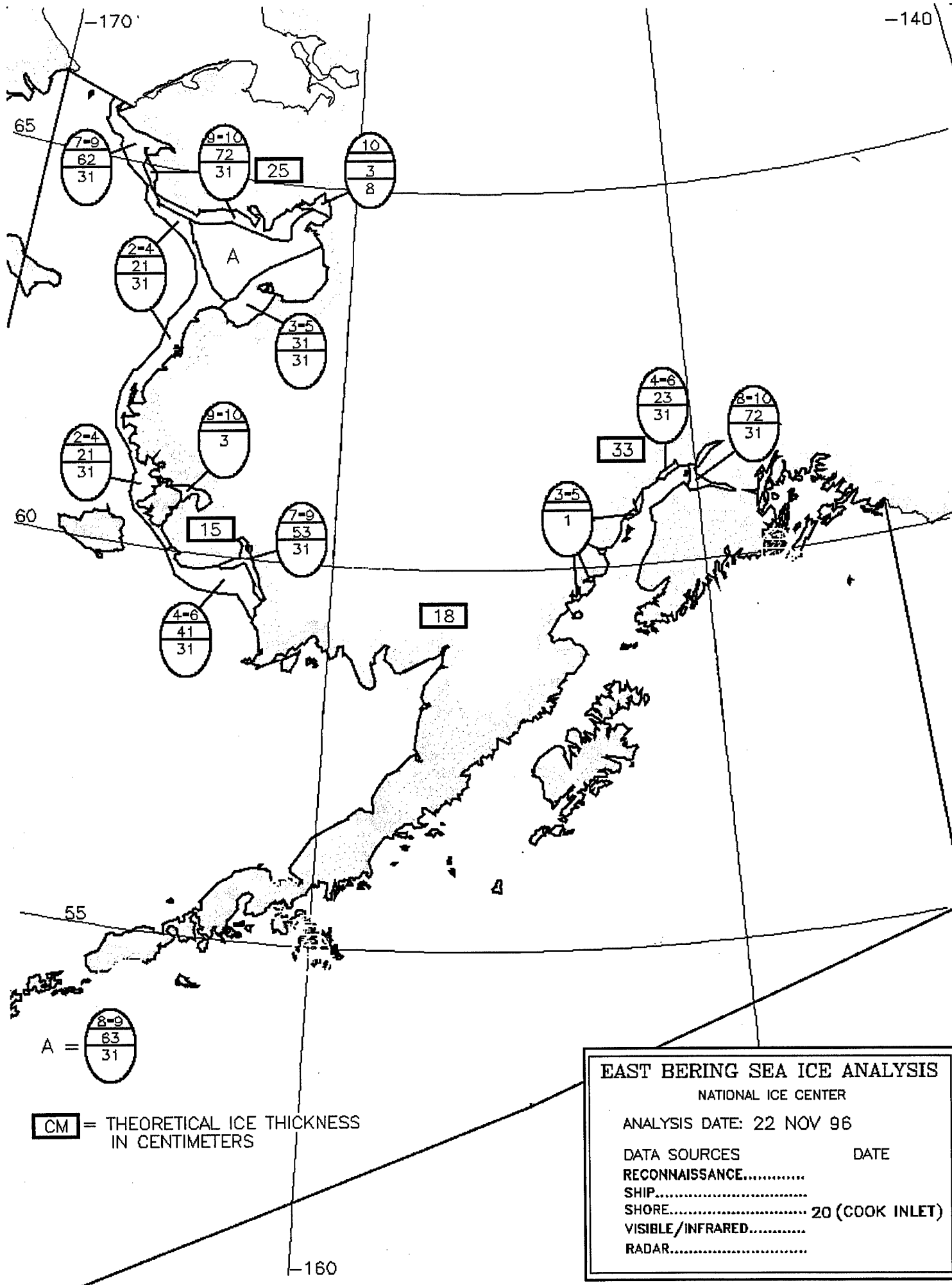
VISIBLE/INFRARED.....

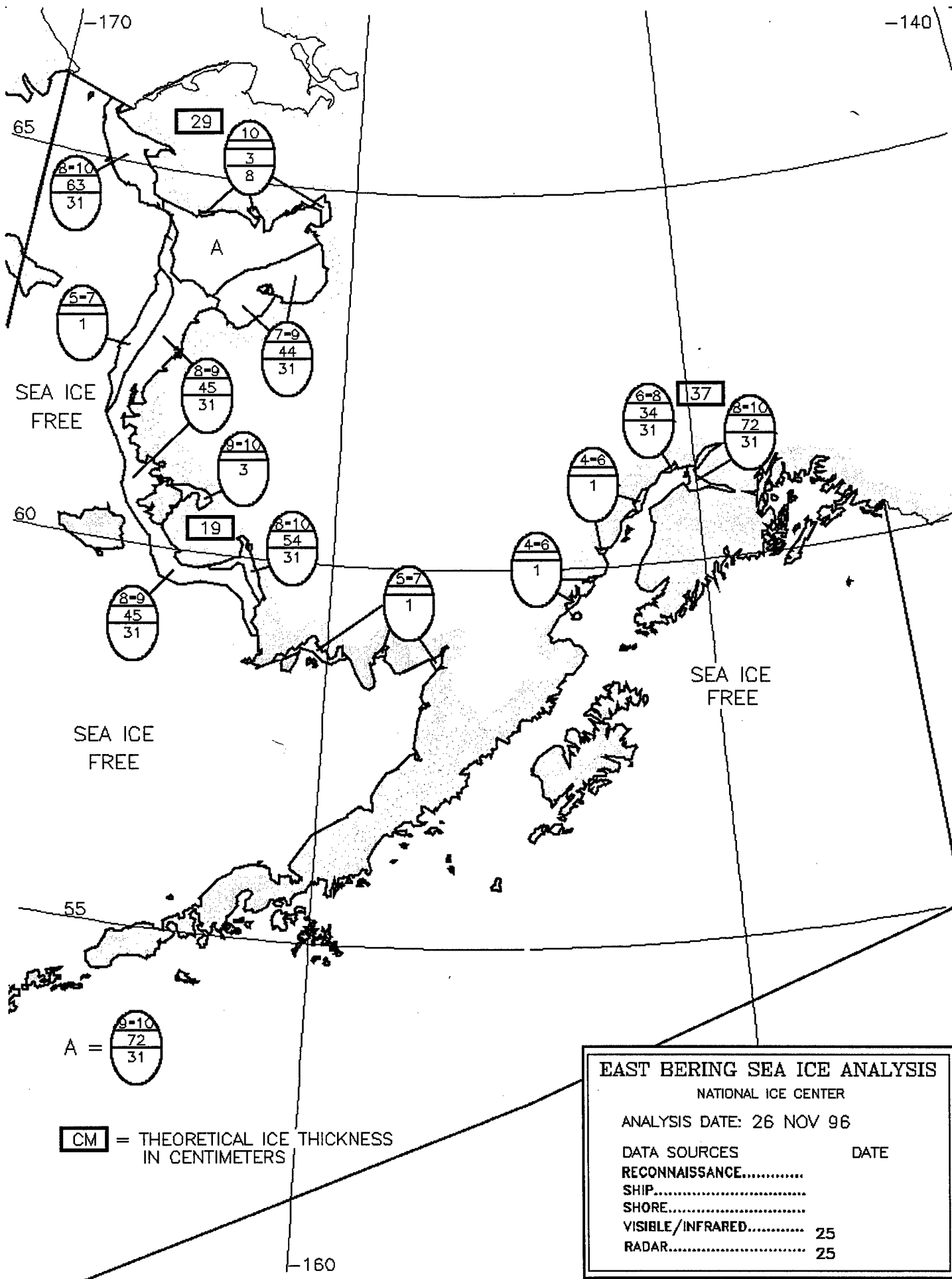
RADAR.....

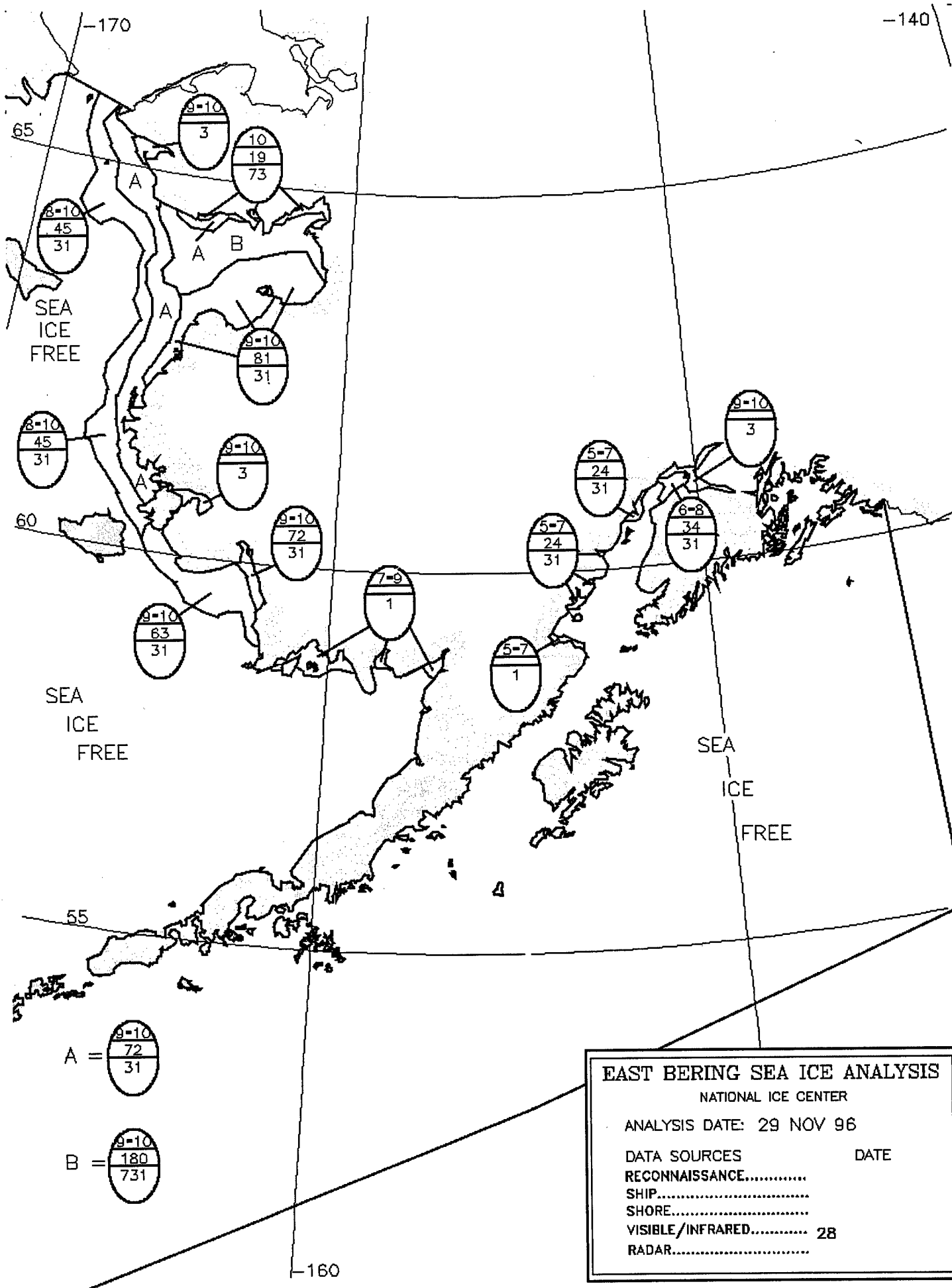


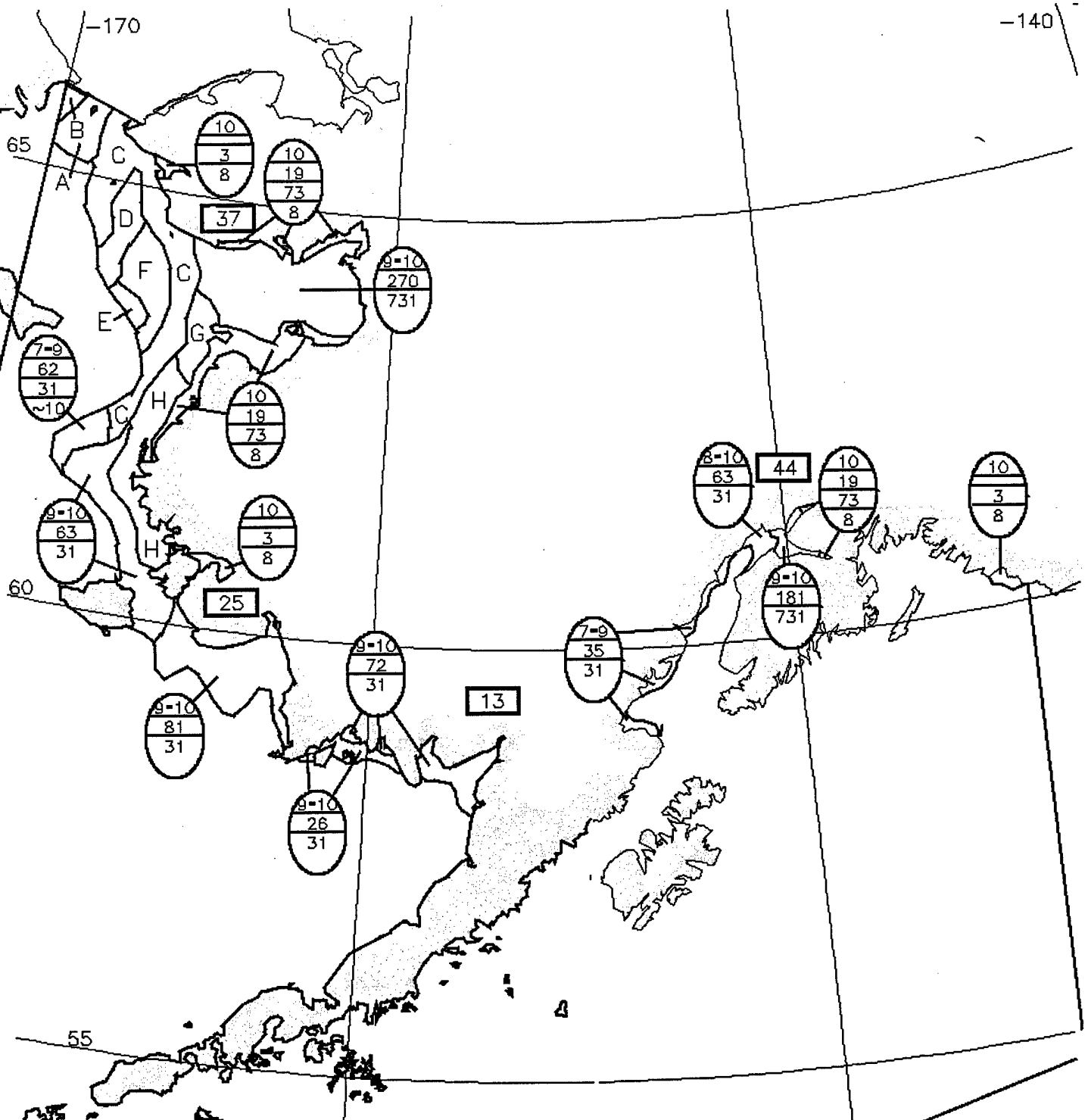


EAST BERING SEA ICE ANALYSIS	
NATIONAL ICE CENTER	
ANALYSIS DATE: 19 NOV 96	
DATA SOURCES	DATE
RECONNAISSANCE.....	
SHIP.....	
SHORE.....	
VISIBLE/INFRARED.....	17 - 18
RADAR.....	









CM = THEORETICAL ICE THICKNESS
IN CENTIMETERS

A = $\frac{6-8}{43}$ 31 C = $\frac{9-10}{63}$ 31 E = $\frac{6-8}{25}$ 31 G = $\frac{8-10}{252}$ 731

B = $\frac{7-9}{35}$ 31 D = $\frac{6-8}{25}$ 31 F = $\frac{9-10}{36}$ 31 H = $\frac{9-10}{90}$ 31

EAST BERING SEA ICE ANALYSIS
NATIONAL ICE CENTER

ANALYSIS DATE: 3 DEC 96

DATA SOURCES DATE

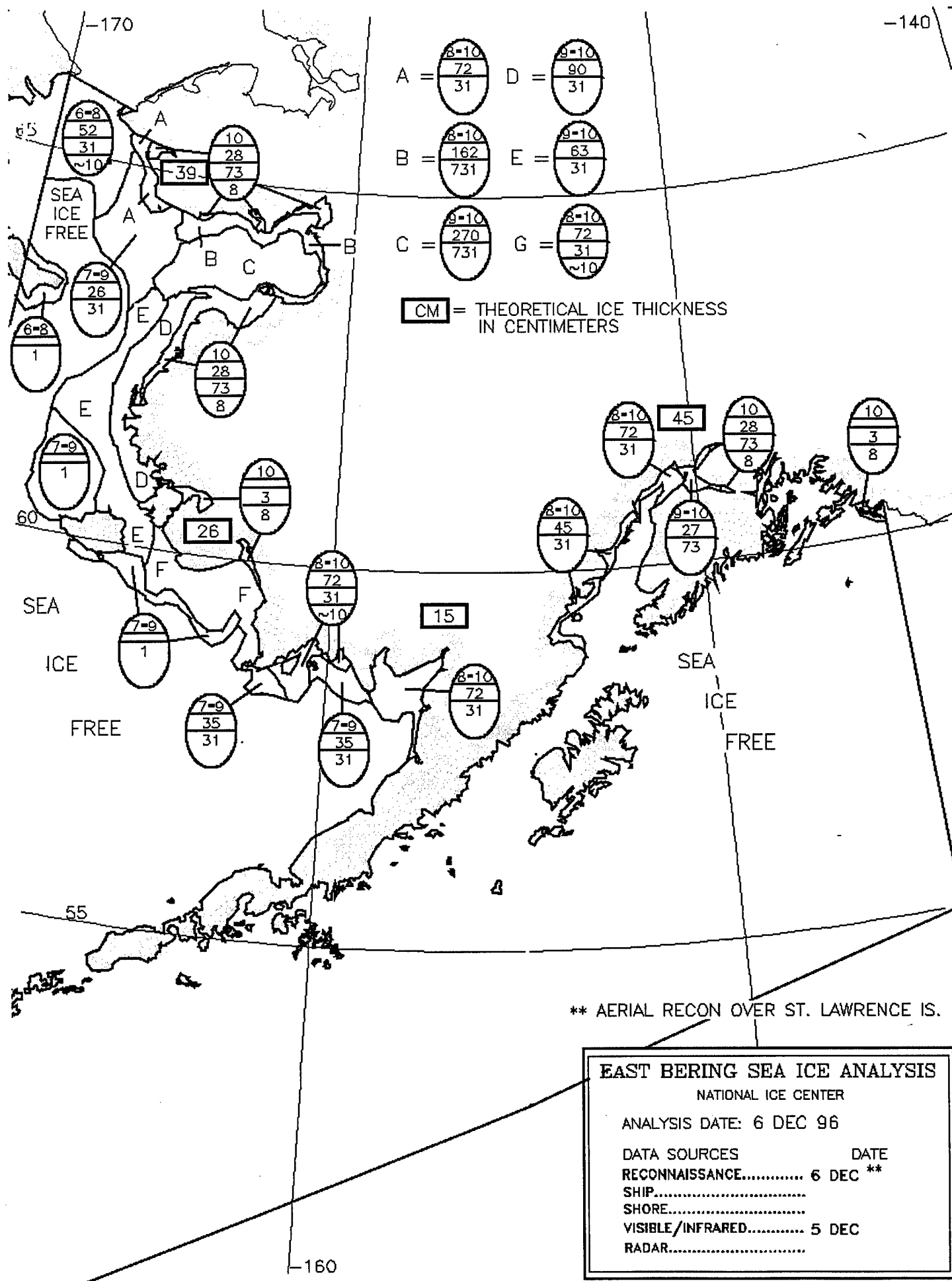
RECONNAISSANCE.....

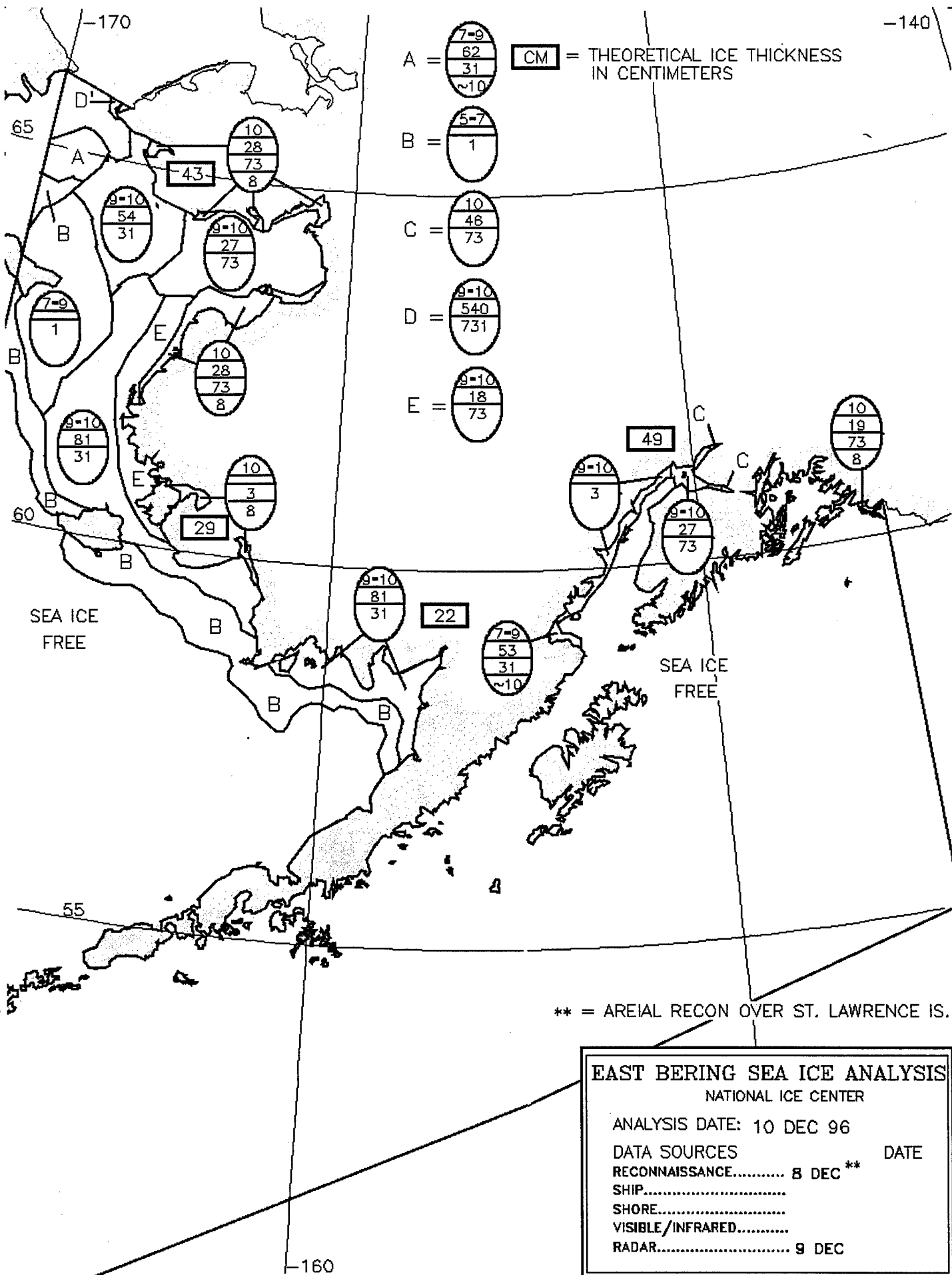
SHIP.....

SHORE.....

VISIBLE/INFRARED..... 1 - 2 DEC

RADAR.....





EAST BERING SEA ICE ANALYSIS
 NATIONAL ICE CENTER

ANALYSIS DATE: 10 DEC 96

DATA SOURCES

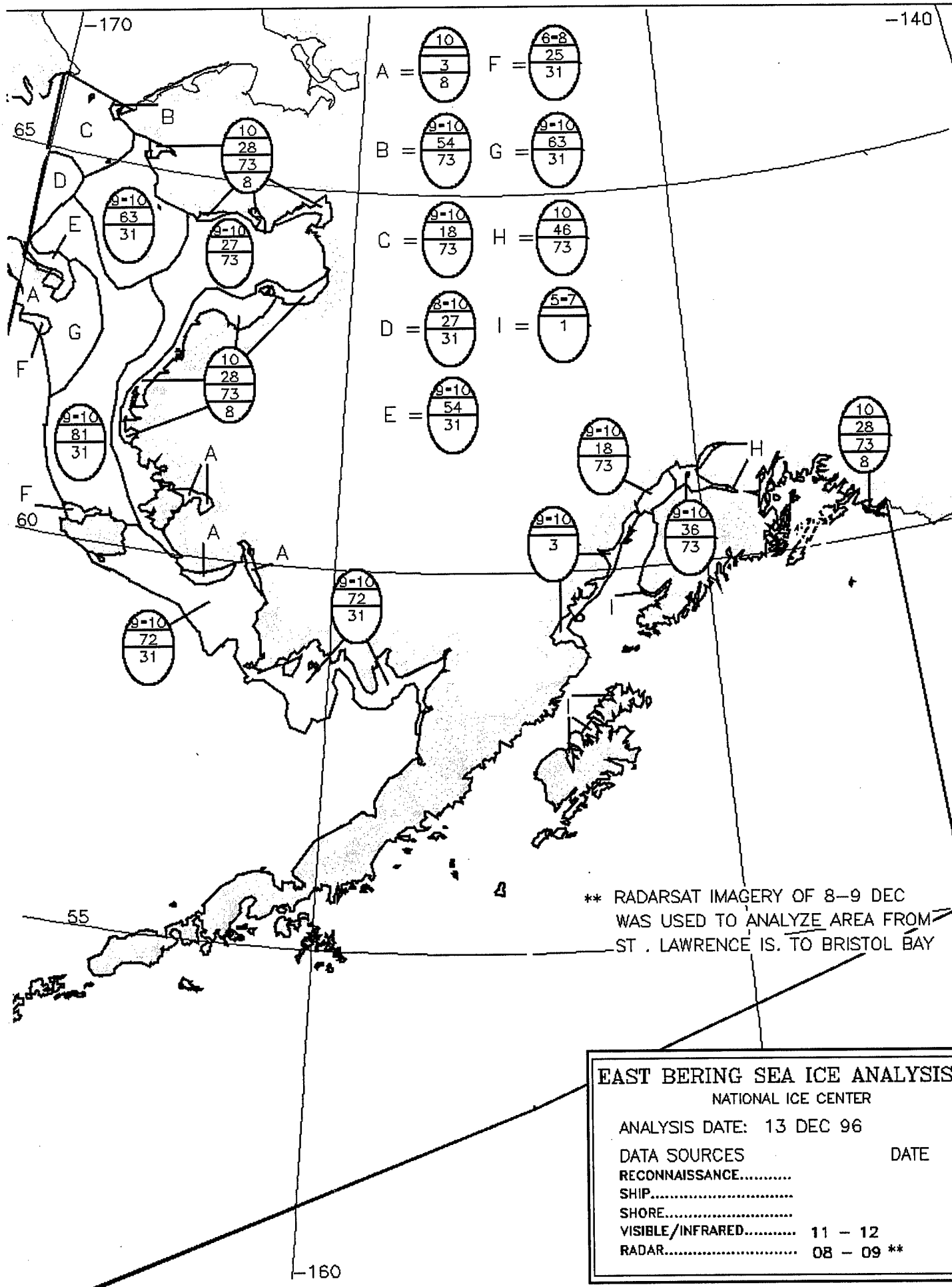
RECONNAISSANCE..... 8 DEC ** DATE

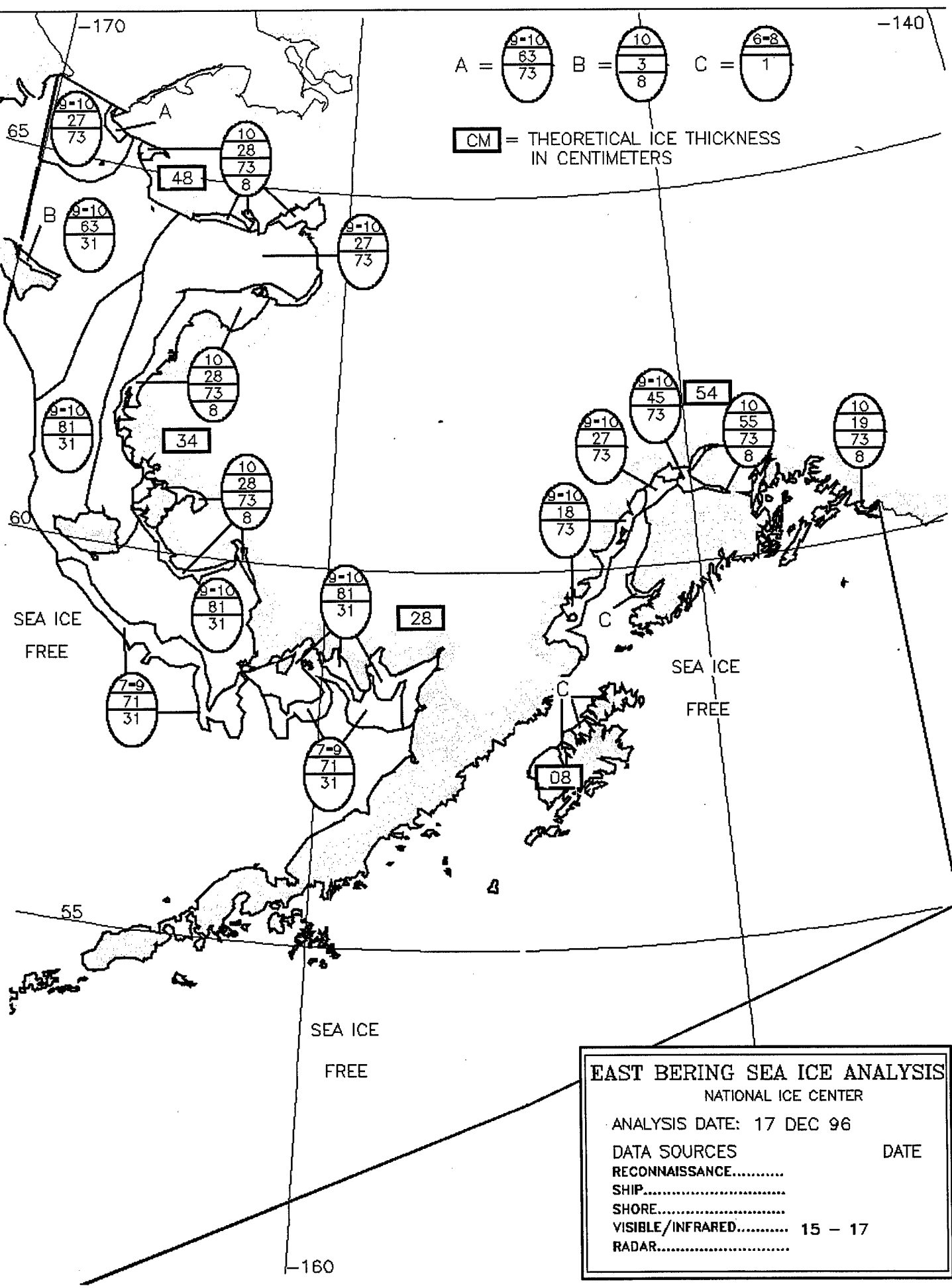
SHIP.....

SHORE.....

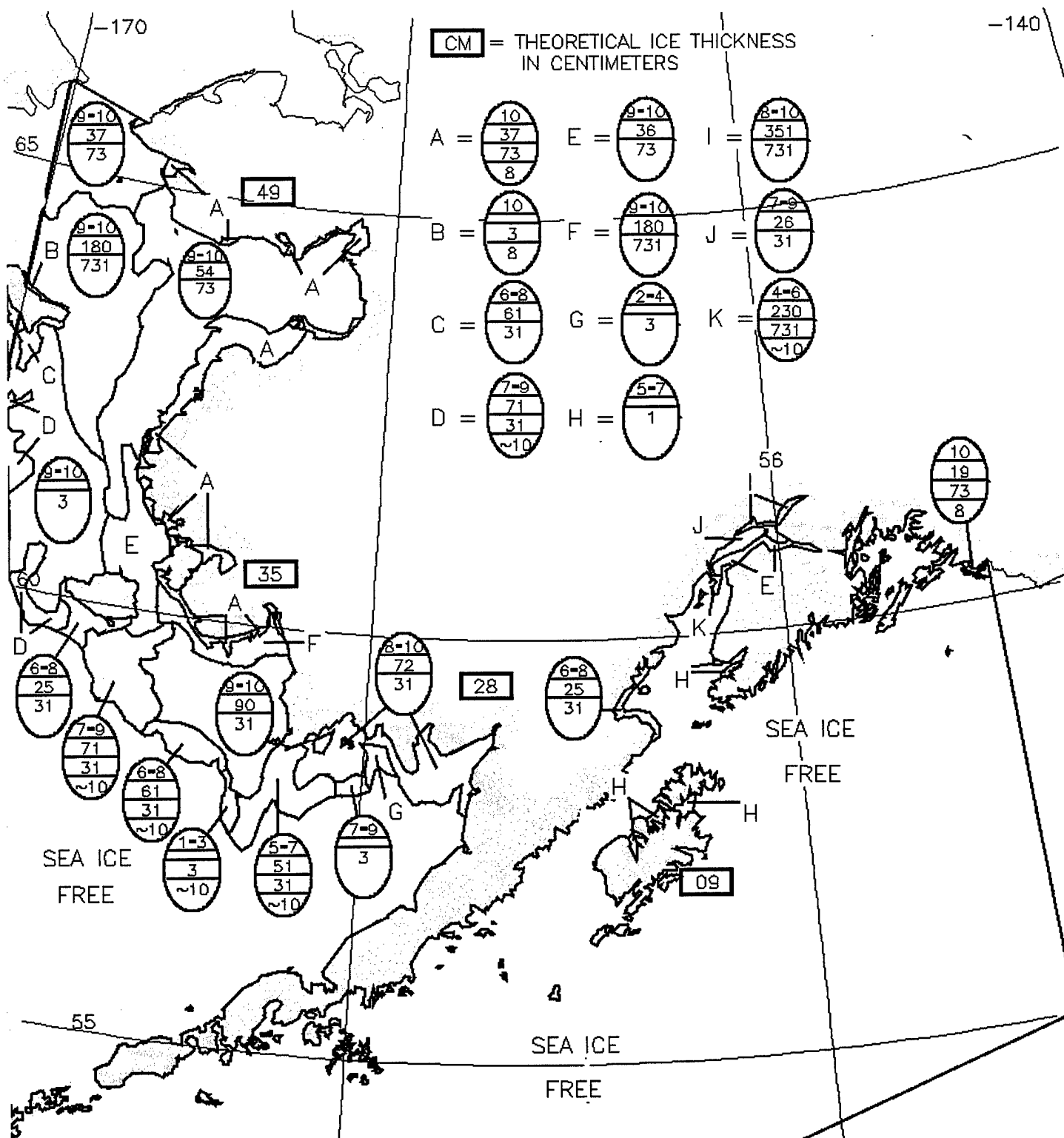
VISIBLE/INFRARED.....

RADAR..... 9 DEC





EAST BERING SEA ICE ANALYSIS	
NATIONAL ICE CENTER	
ANALYSIS DATE: 17 DEC 96	
DATA SOURCES	DATE
RECONNAISSANCE.....	
SHIP.....	
SHORE.....	
VISIBLE/INFRARED.....	15 - 17
RADAR.....	



** CORRECTED COPY TO UPDATE
COOK INLET ANALYSIS

EAST BERING SEA/COOK INLET ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 20 DEC 96 **

DATA SOURCES DATE

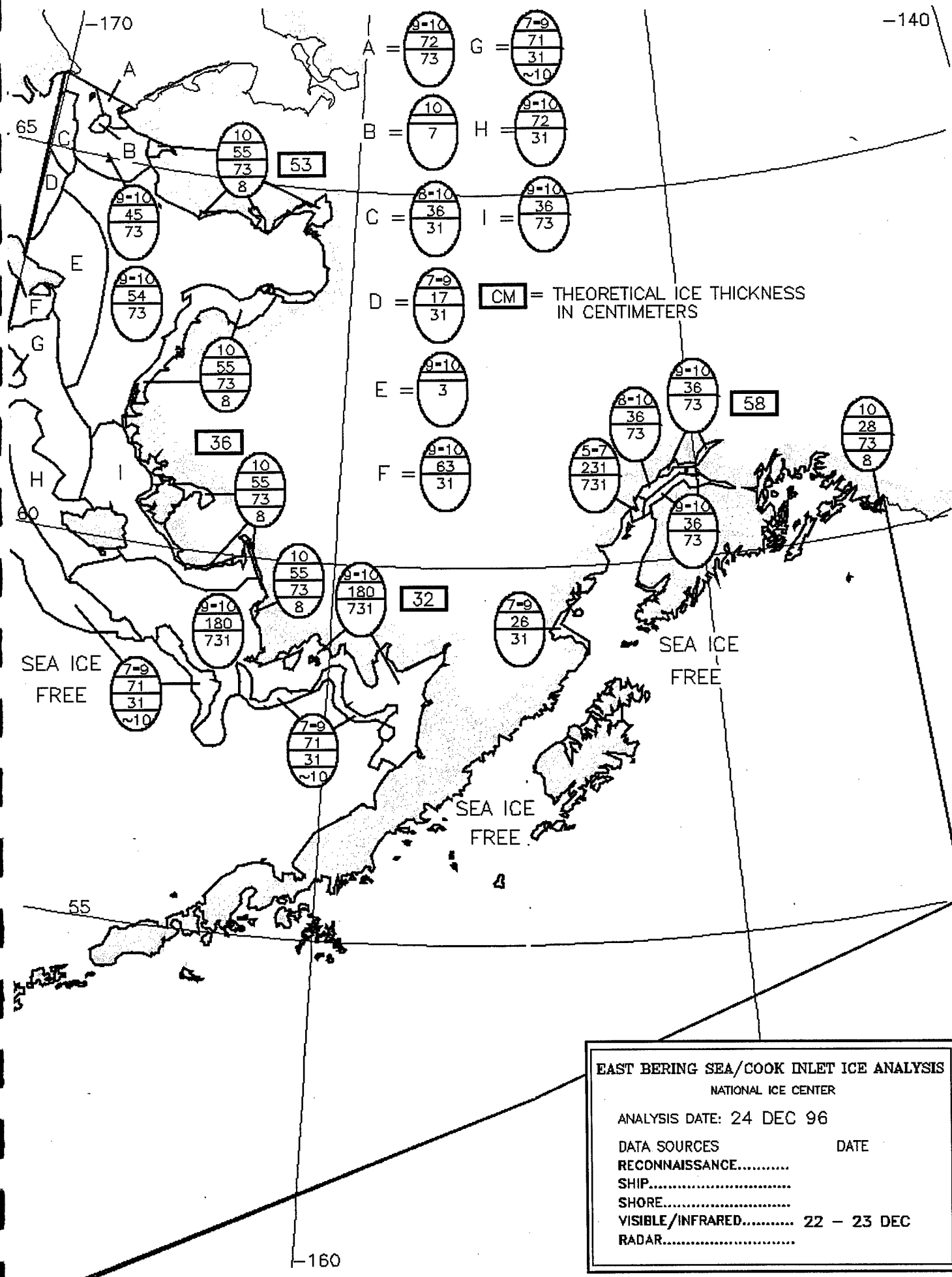
RECONNAISSANCE.....

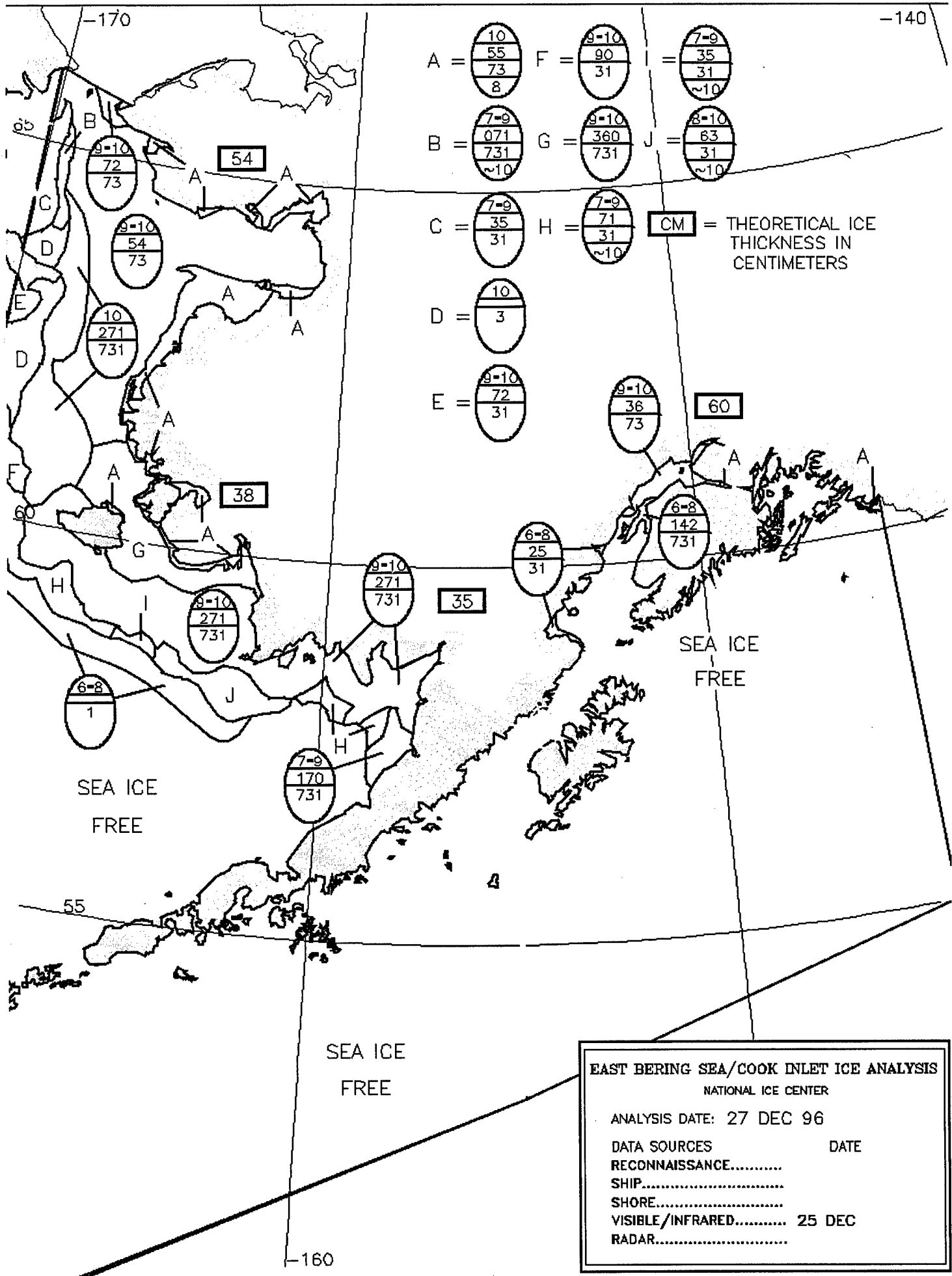
SHIP.....

SHORE.....

VISIBLE/INFRARED..... 18 - 19 DEC

RADAR..... 17 (COOK INLET)





EAST BERING SEA/COOK INLET ICE ANALYSIS
NATIONAL ICE CENTER

ANALYSIS DATE: 27 DEC 96

DATA SOURCES DATE

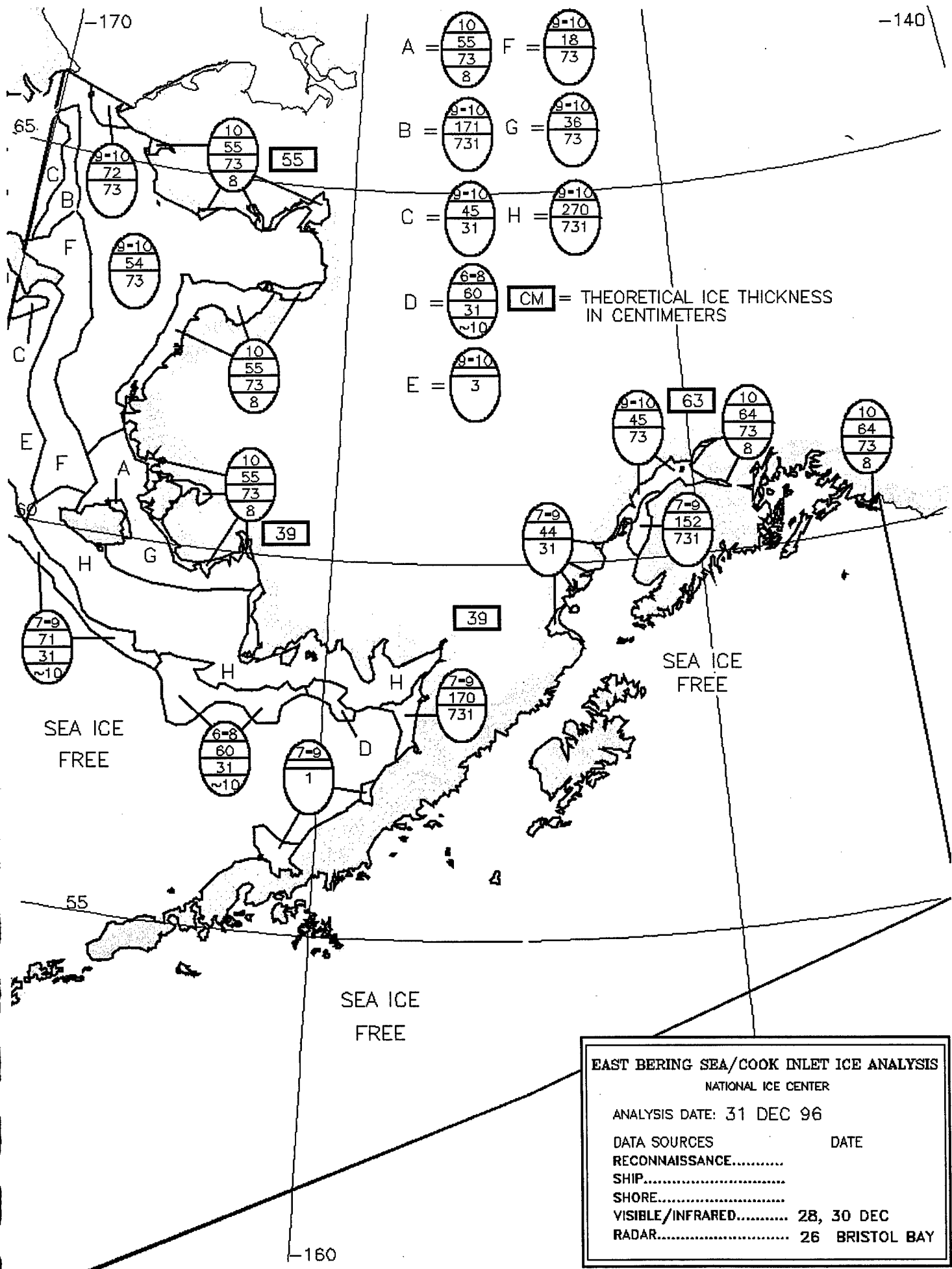
RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 25 DEC

RADAR.....



EAST BERING SEA/COOK INLET ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 31 DEC 96

DATA SOURCES DATE

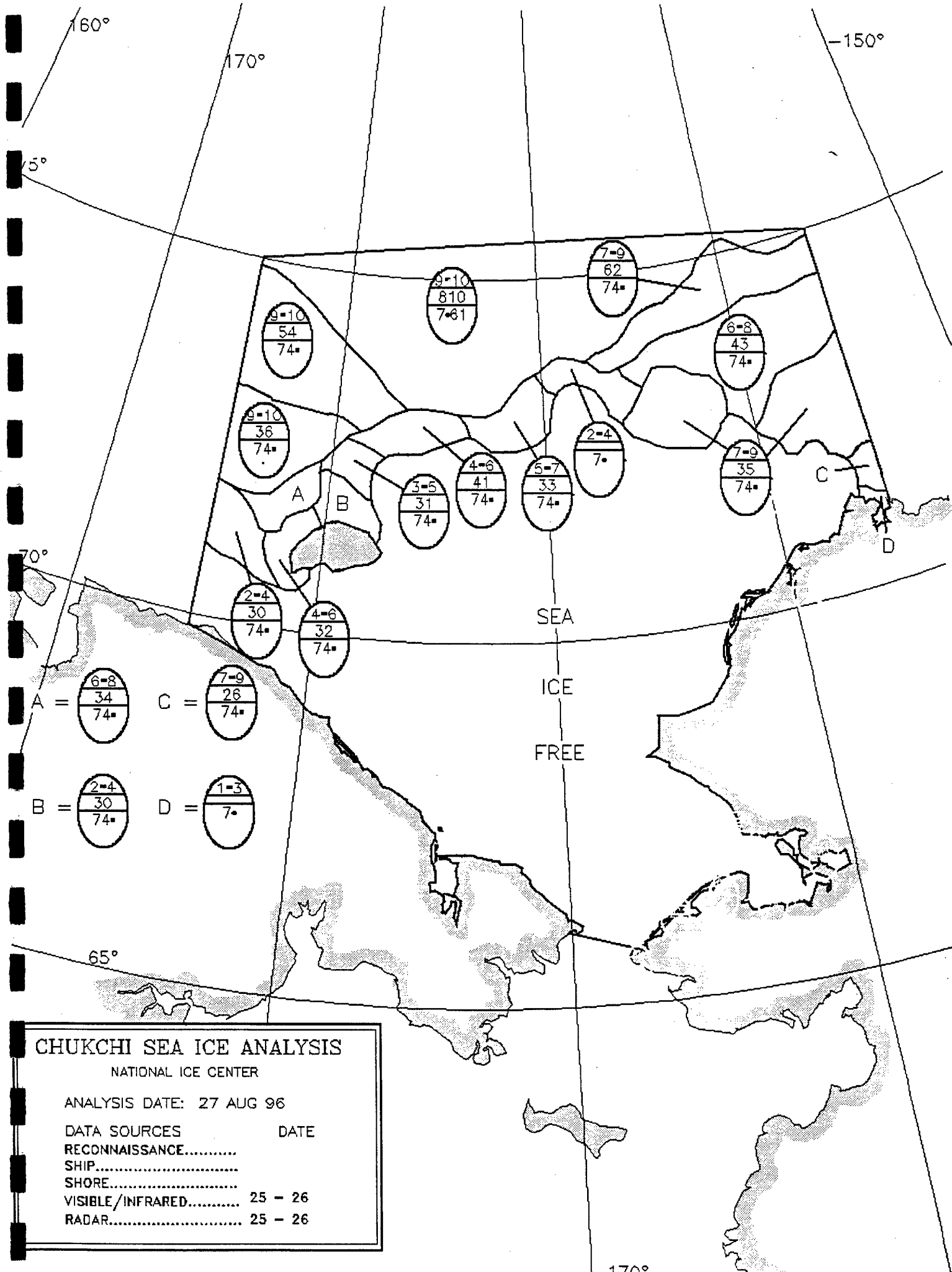
RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 28, 30 DEC

RADAR..... 26 BRISTOL BAY



CHUKCHI SEA ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 27 AUG 96

DATA SOURCES DATE

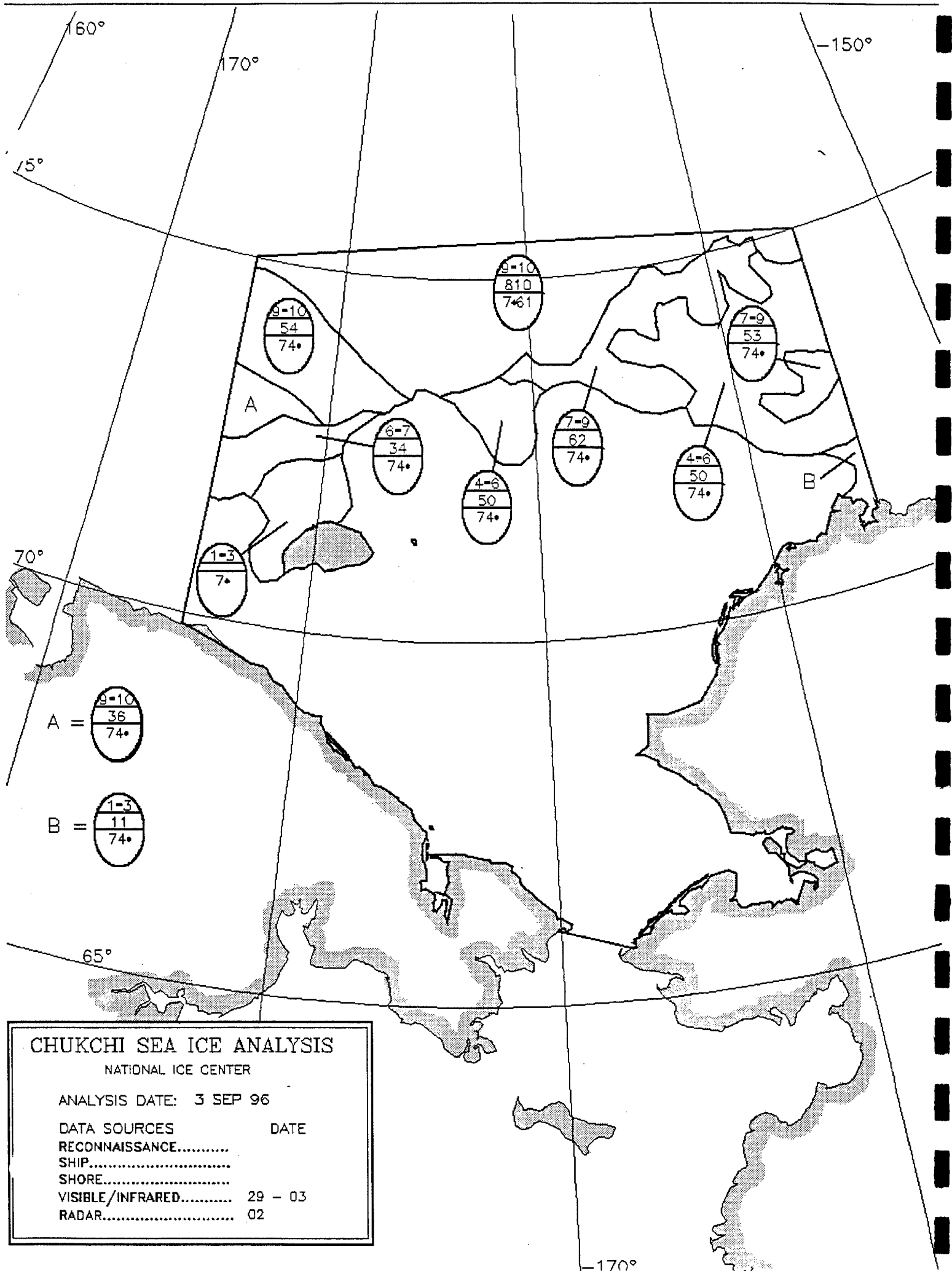
RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 25 - 26

RADAR..... 25 - 26



CHUKCHI SEA ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 3 SEP 96

DATA SOURCES DATE

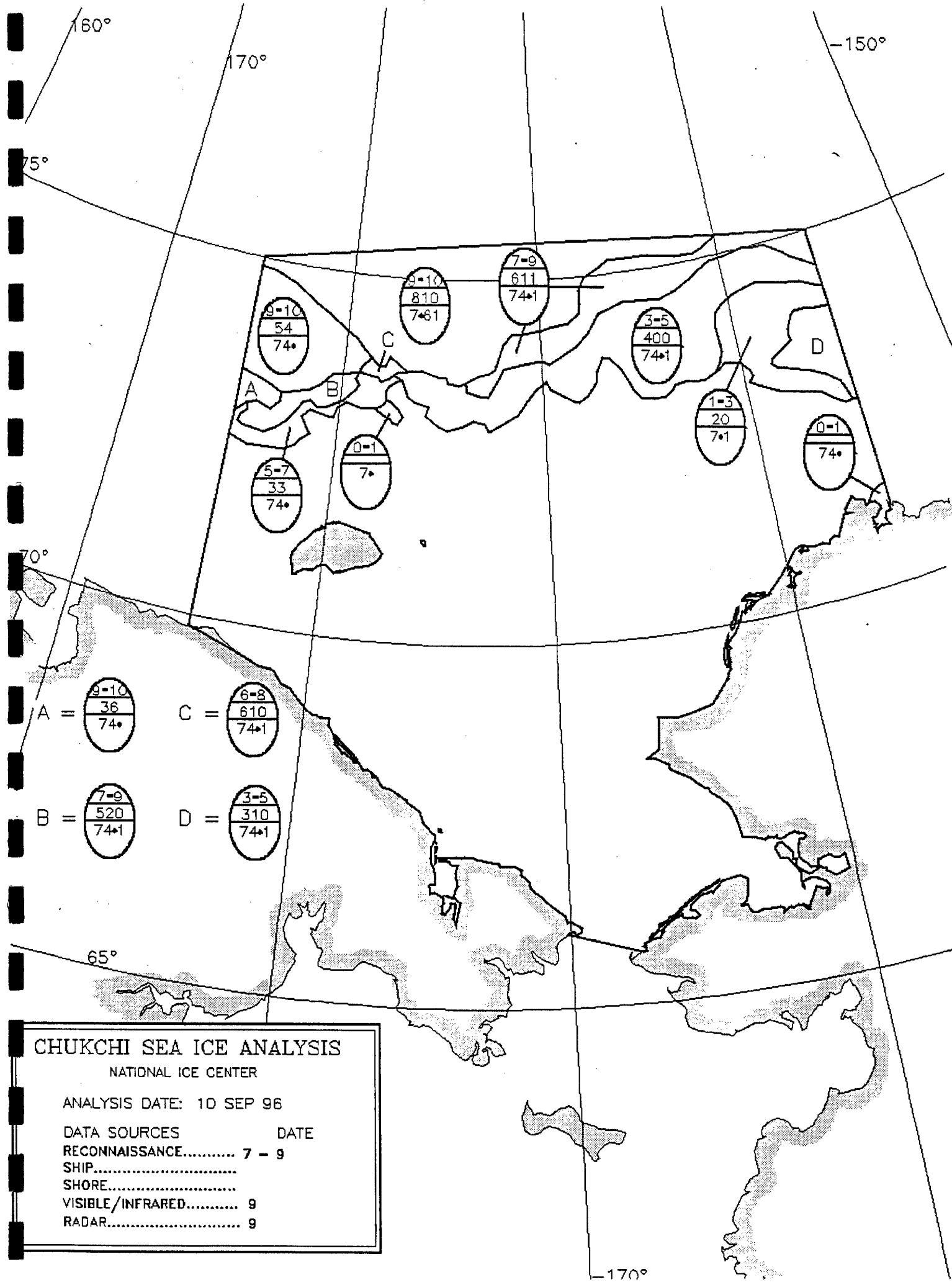
RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 29 - 03

RADAR..... 02

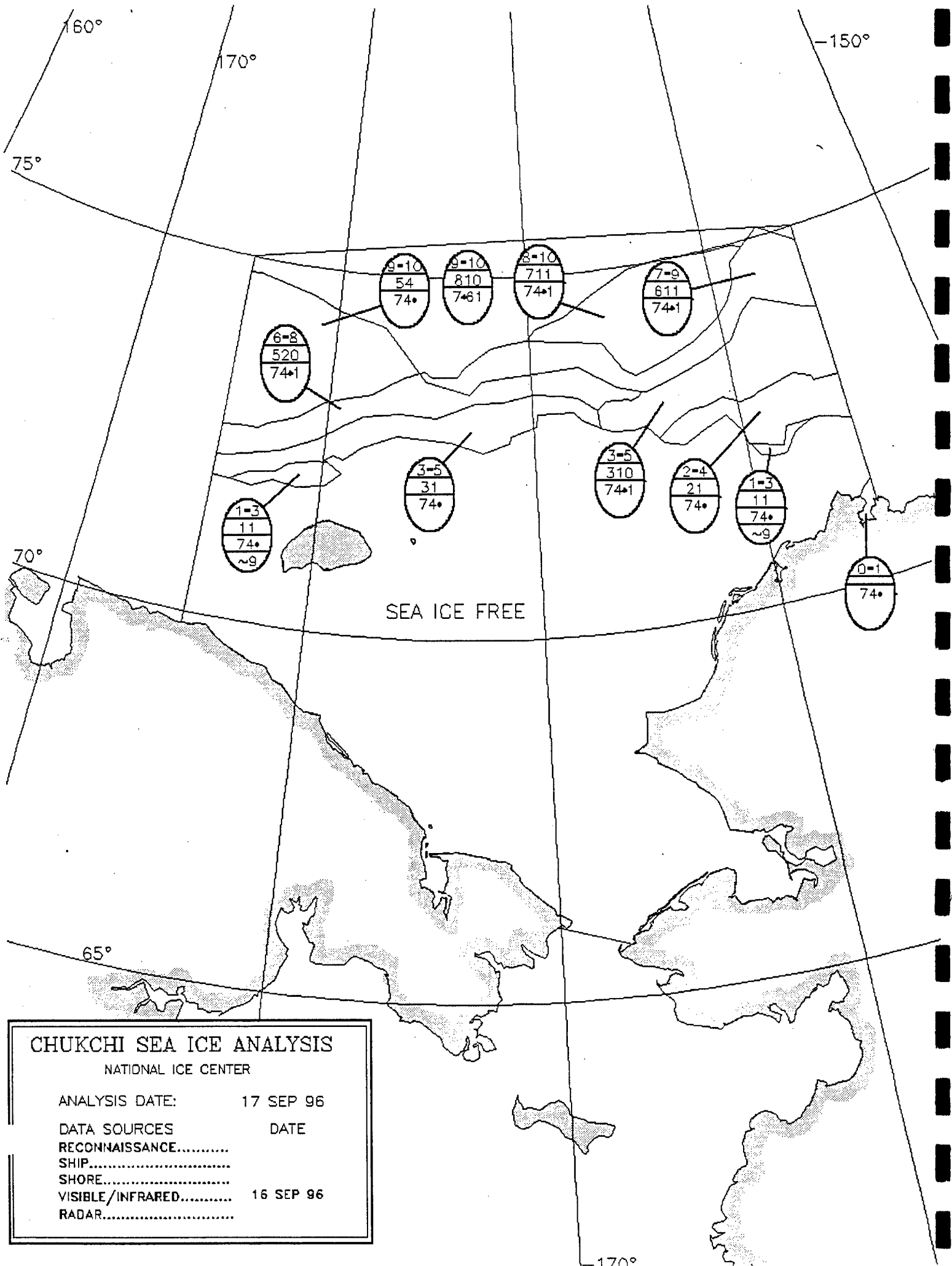


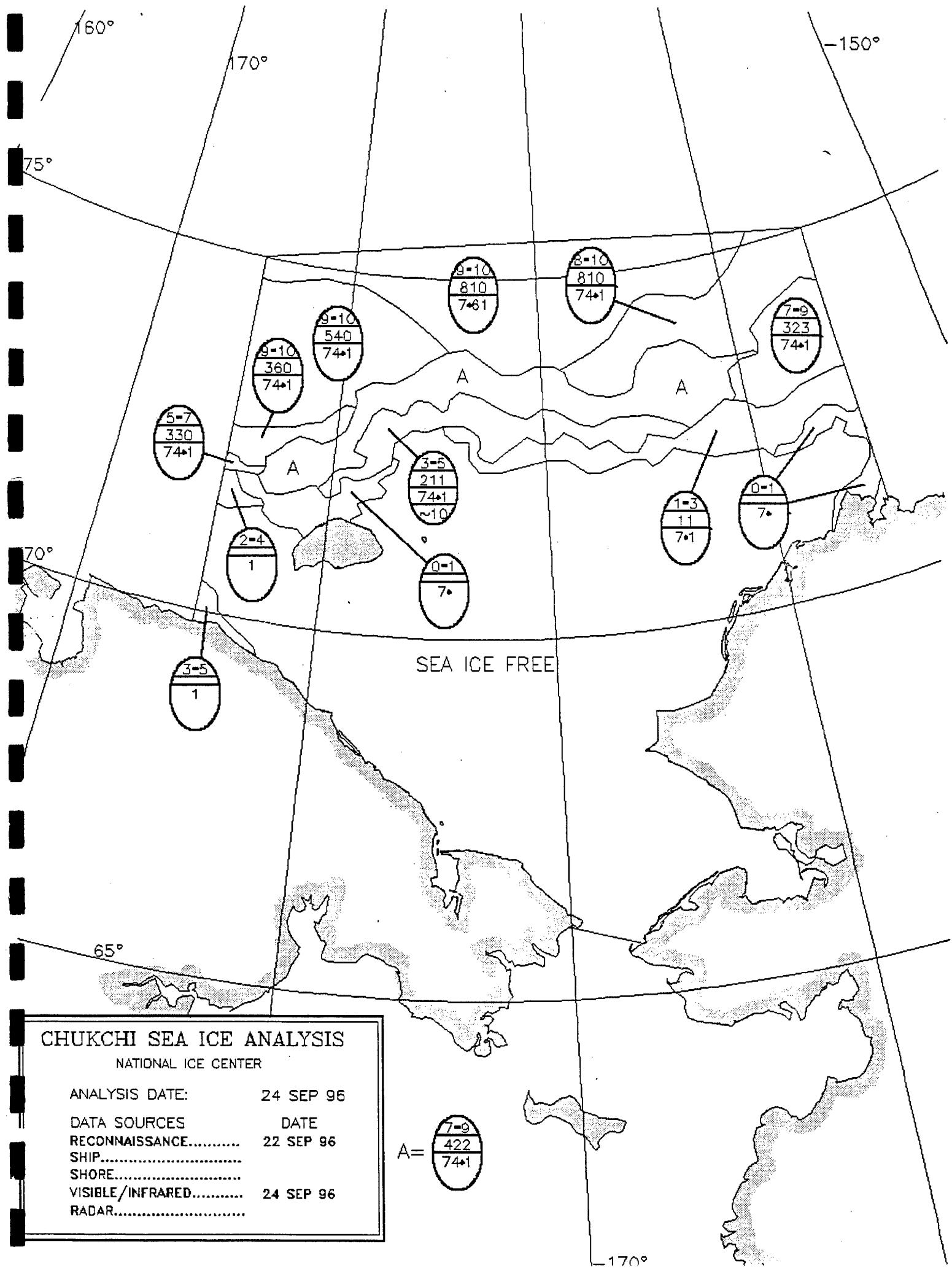
CHUKCHI SEA ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 10 SEP 96

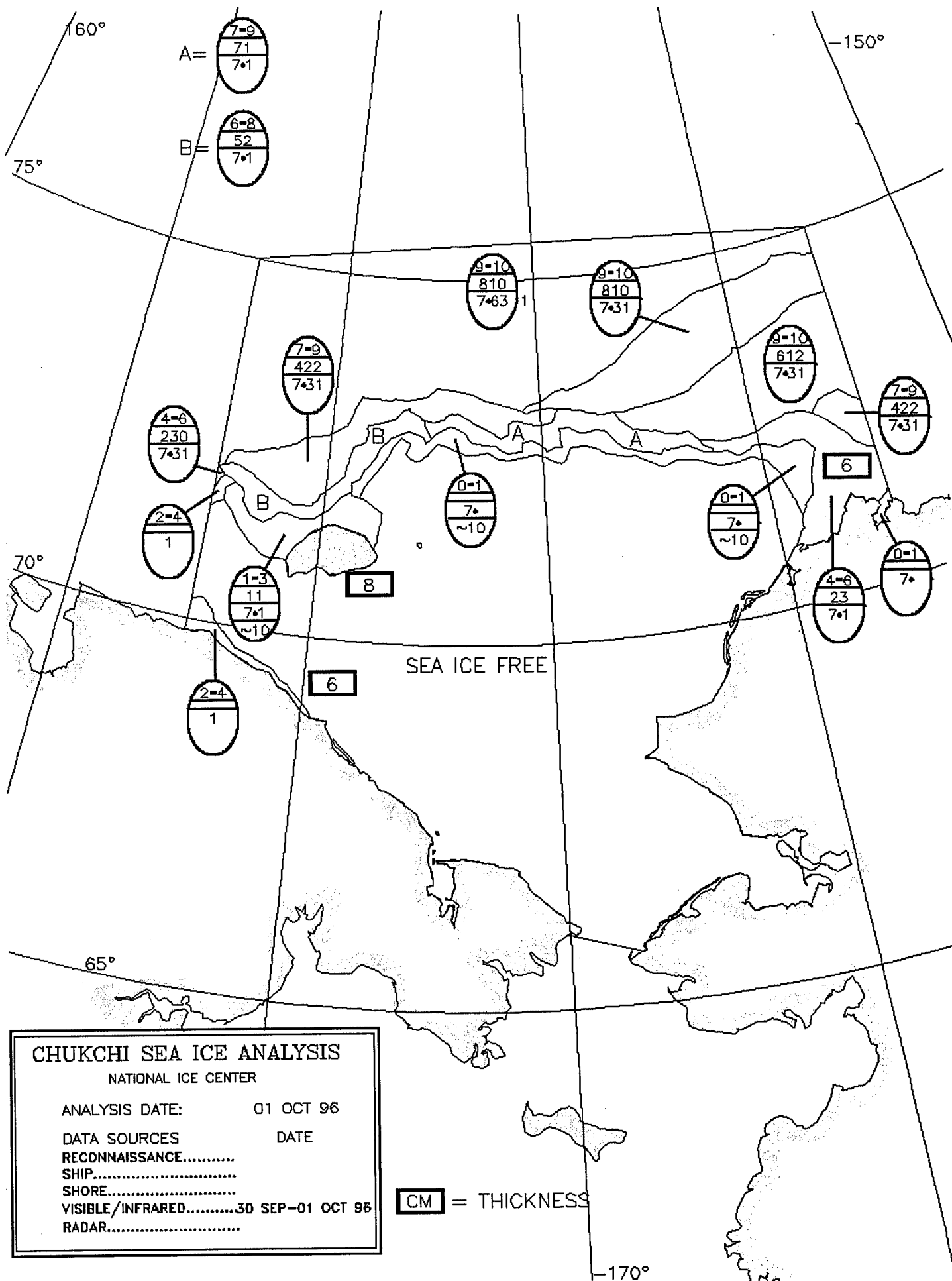
DATA SOURCES	DATE
RECONNAISSANCE.....	7 - 9
SHIP.....	
SHORE.....	
VISIBLE/INFRARED.....	9
RADAR.....	9

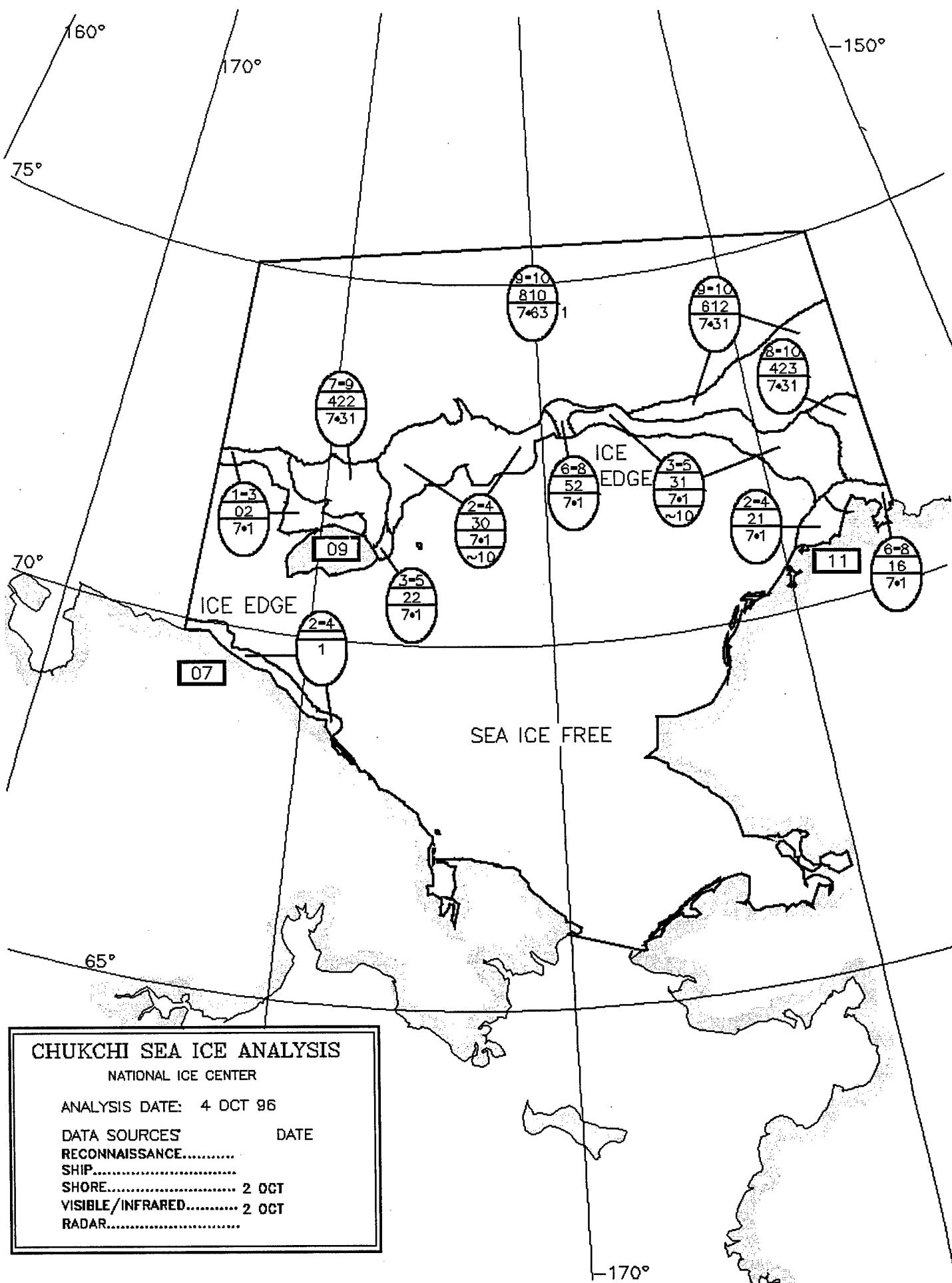




A=

7-9
422
74+1





CHUKCHI SEA ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 4 OCT 96

DATA SOURCES DATE

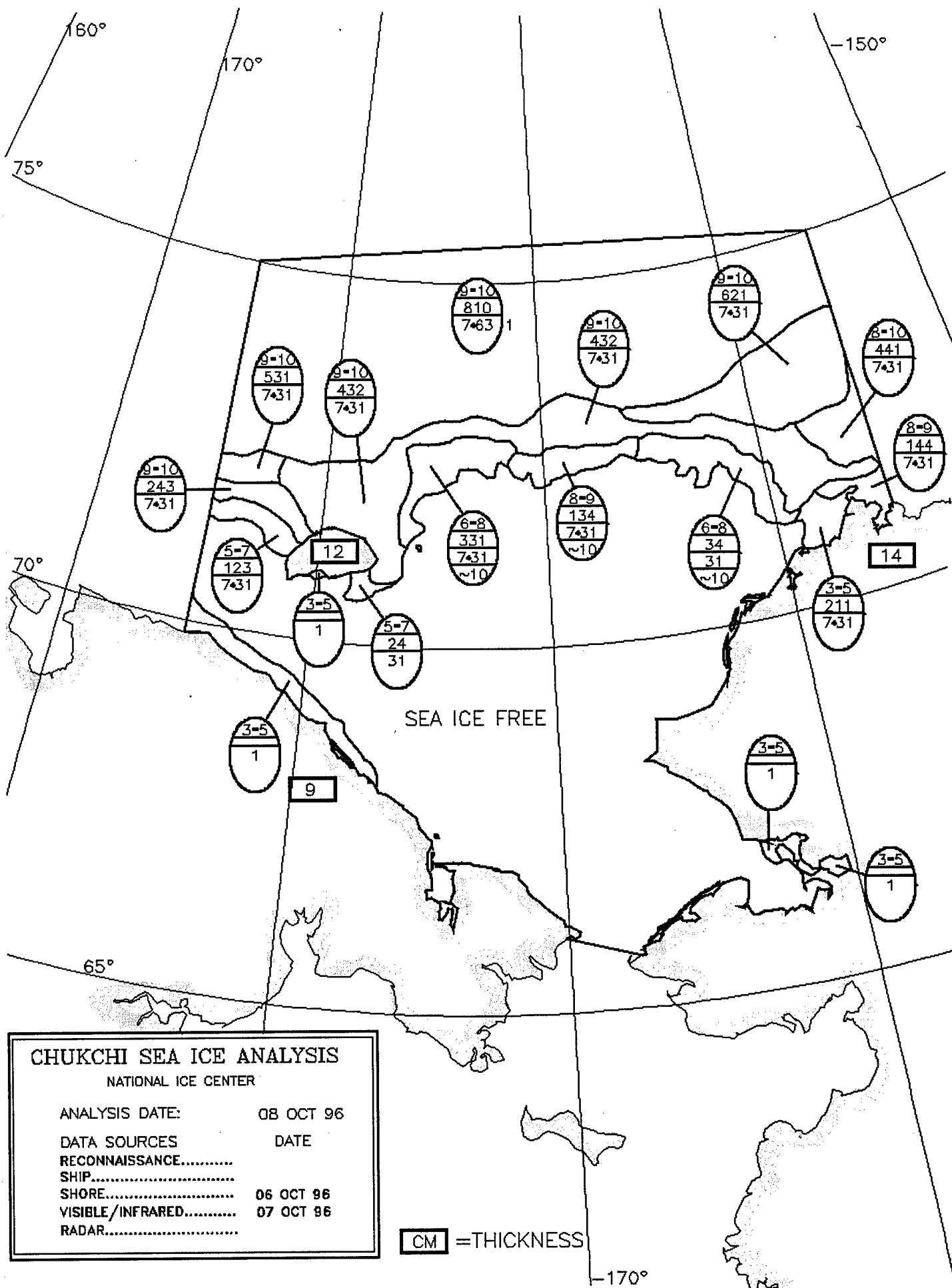
RECONNAISSANCE.....

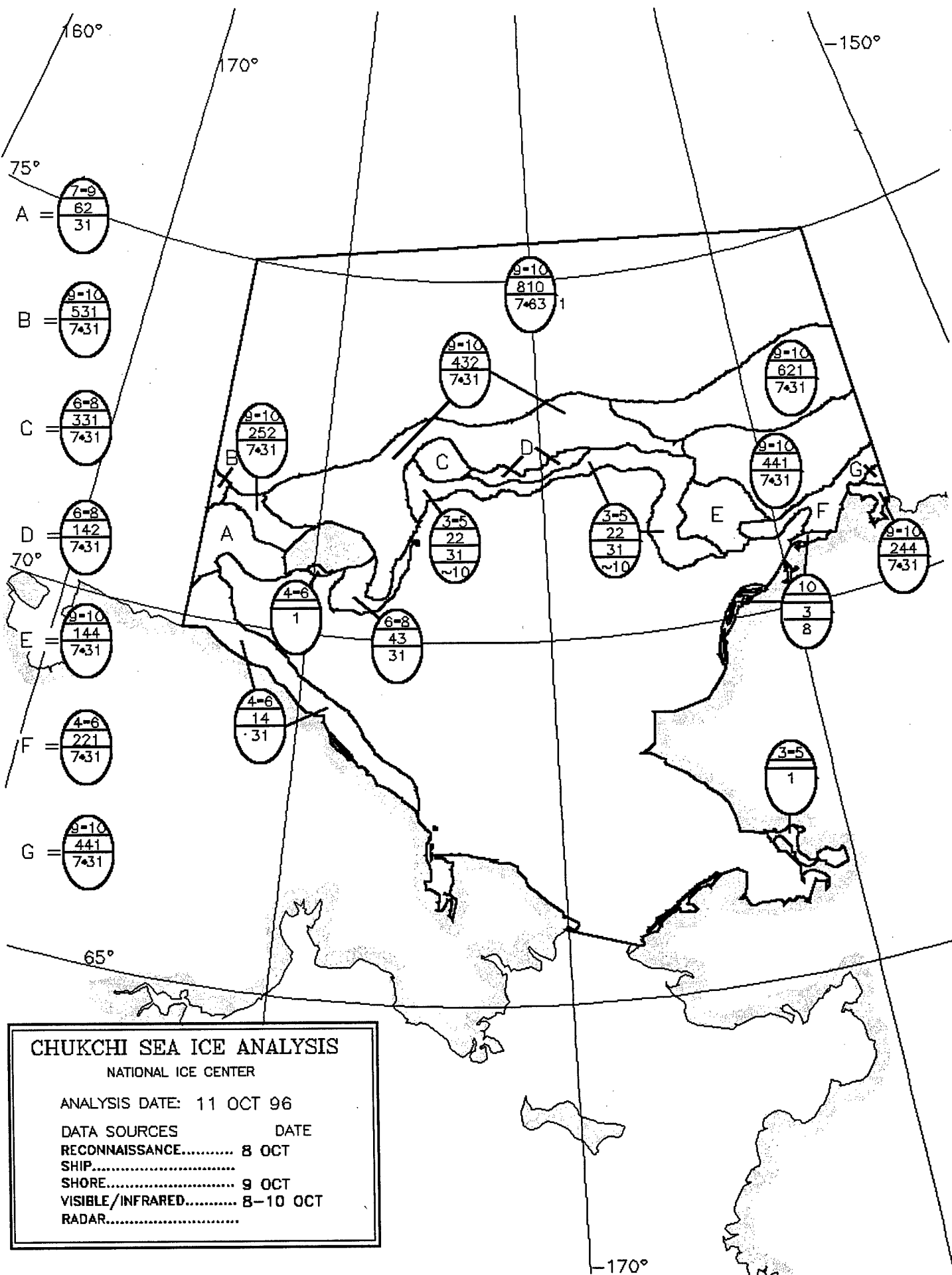
SHIP.....

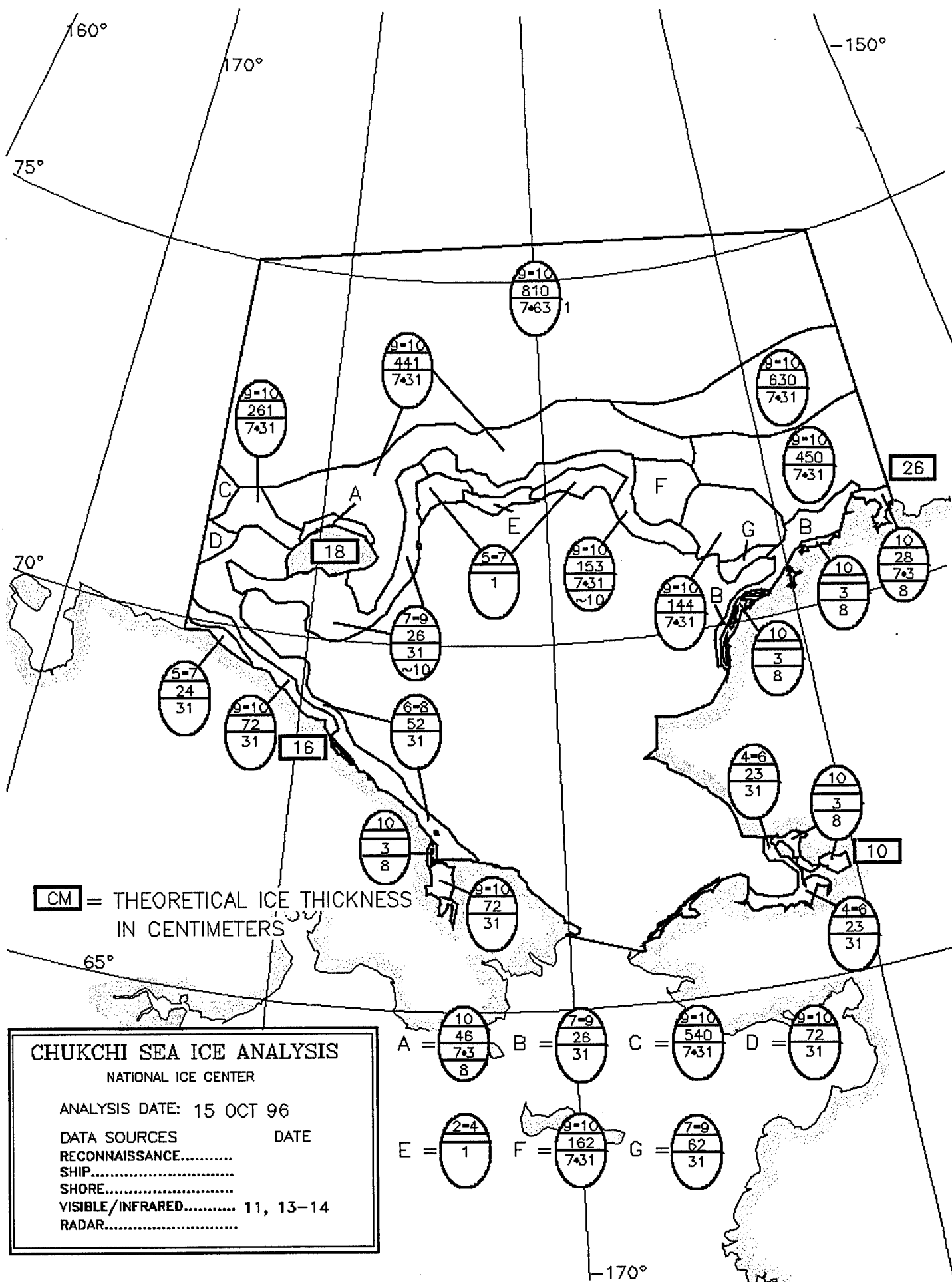
SHORE..... 2 OCT

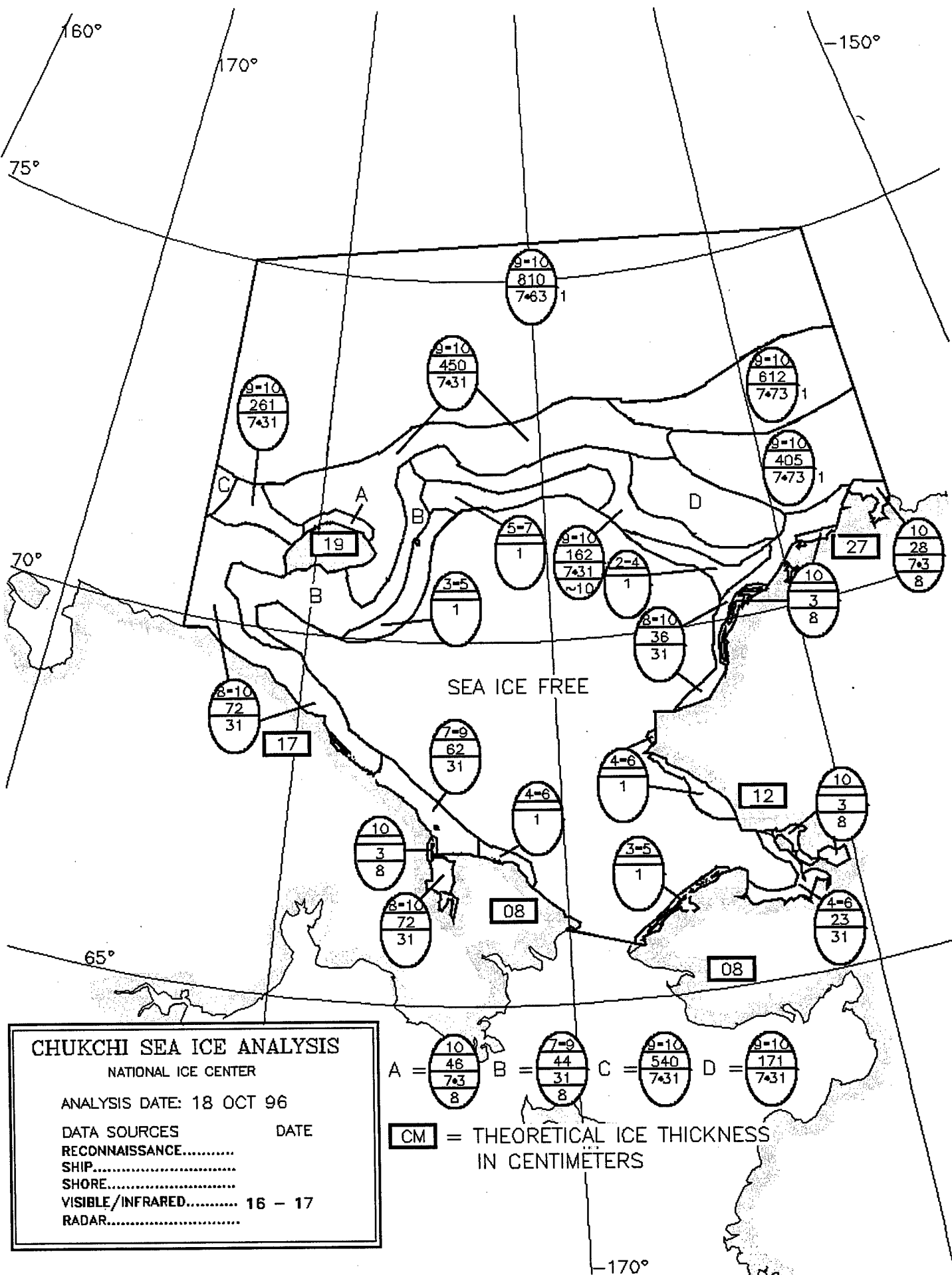
VISIBLE/INFRARED..... 2 OCT

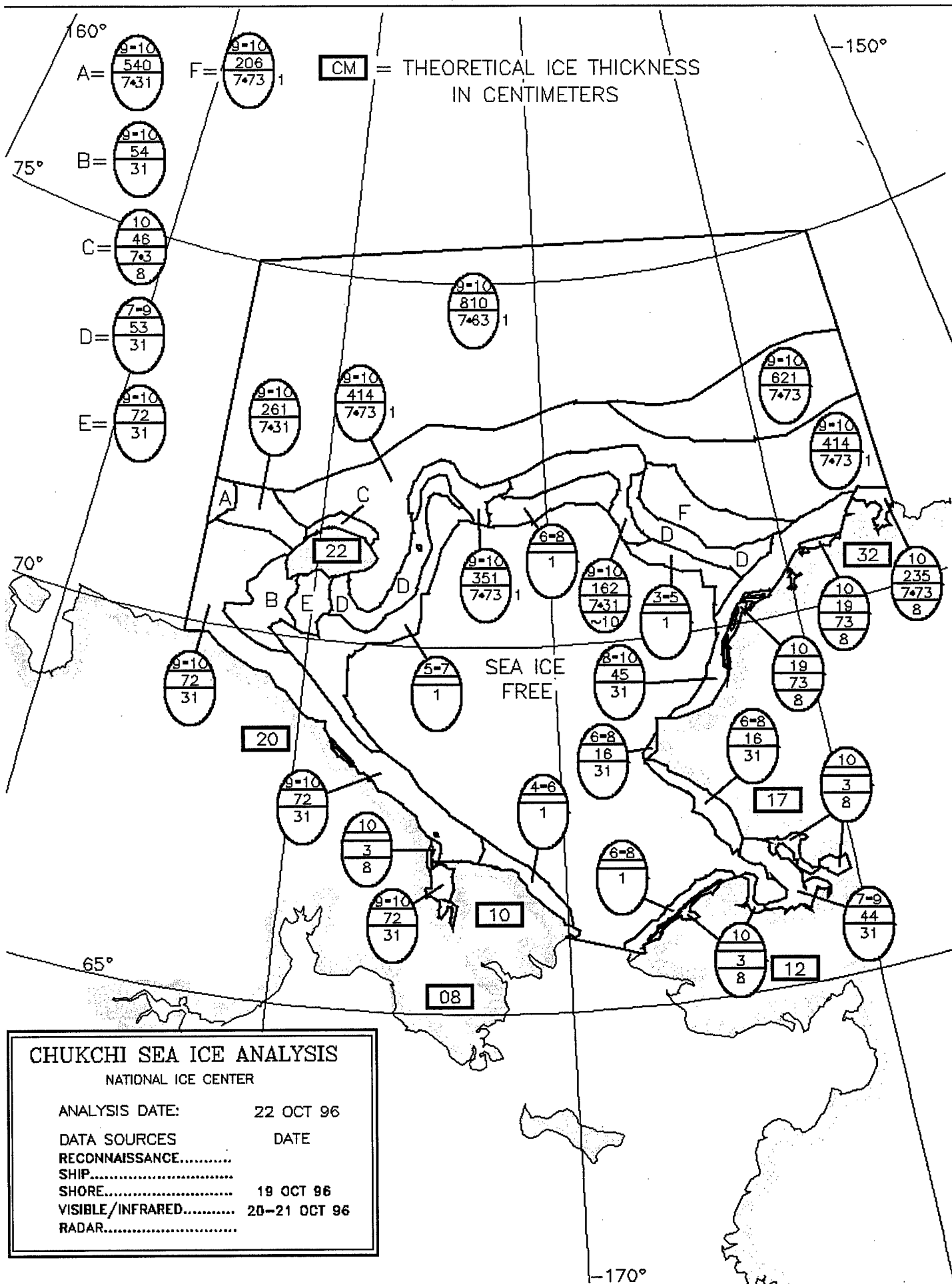
RADAR.....

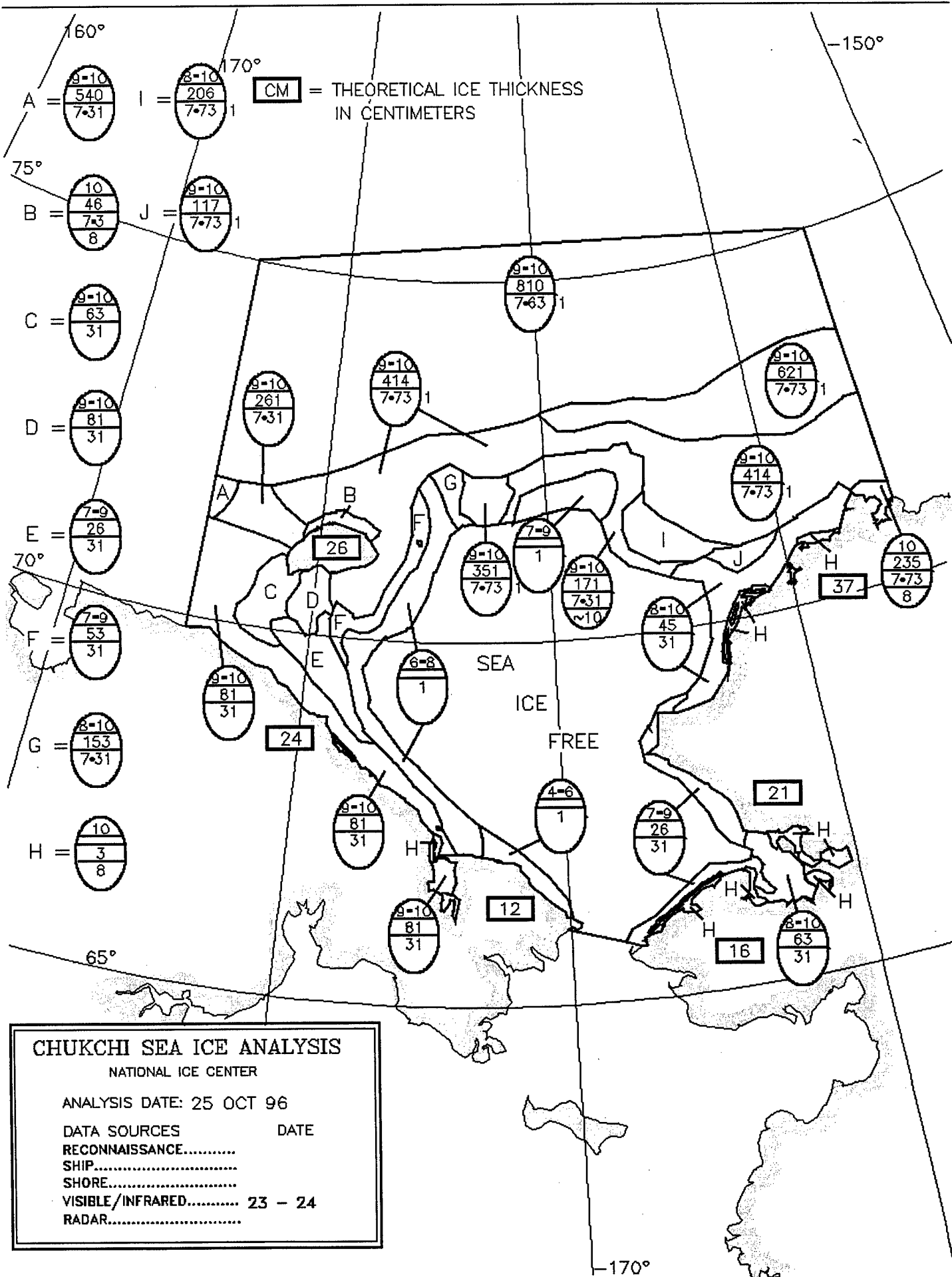


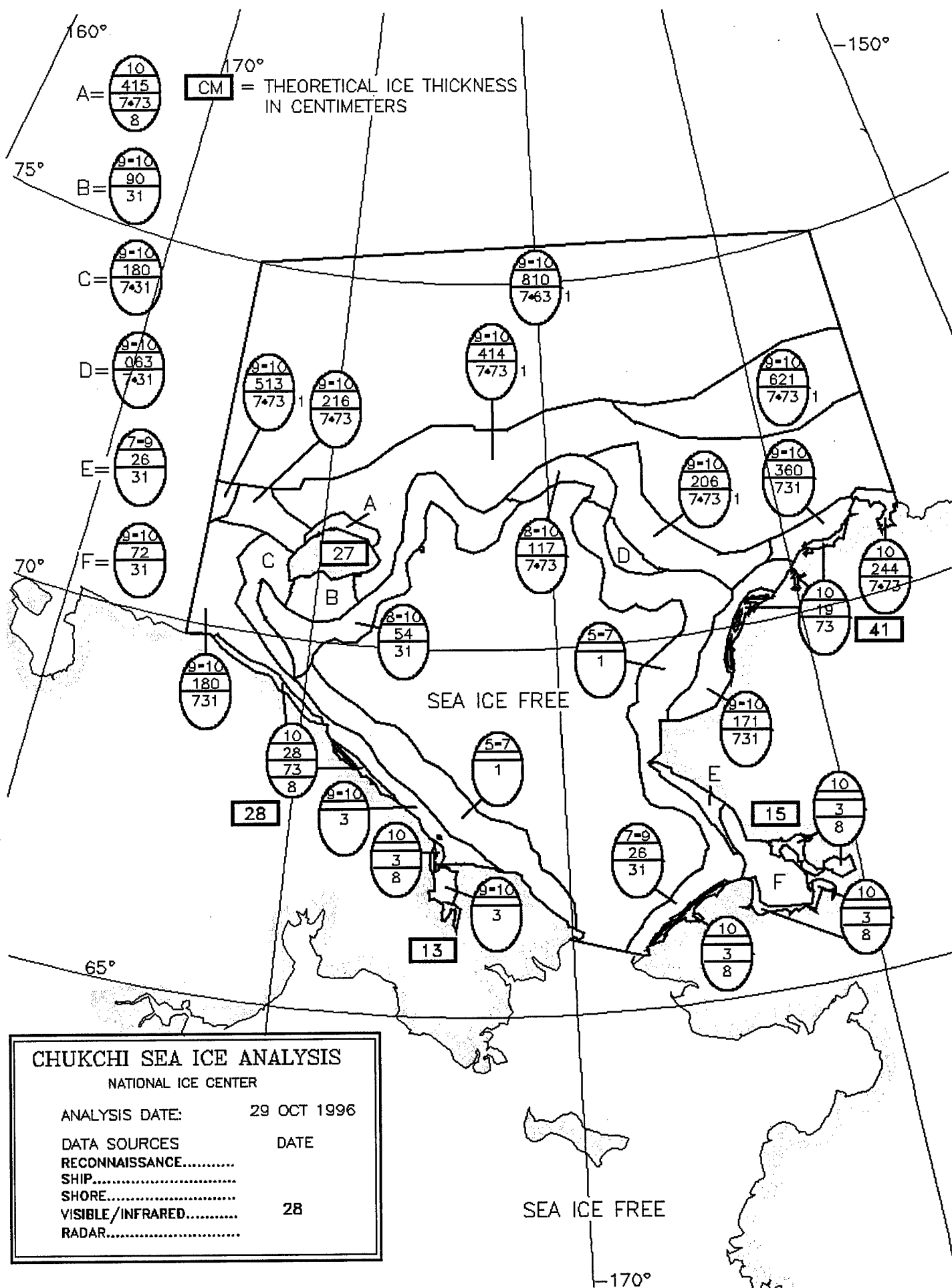


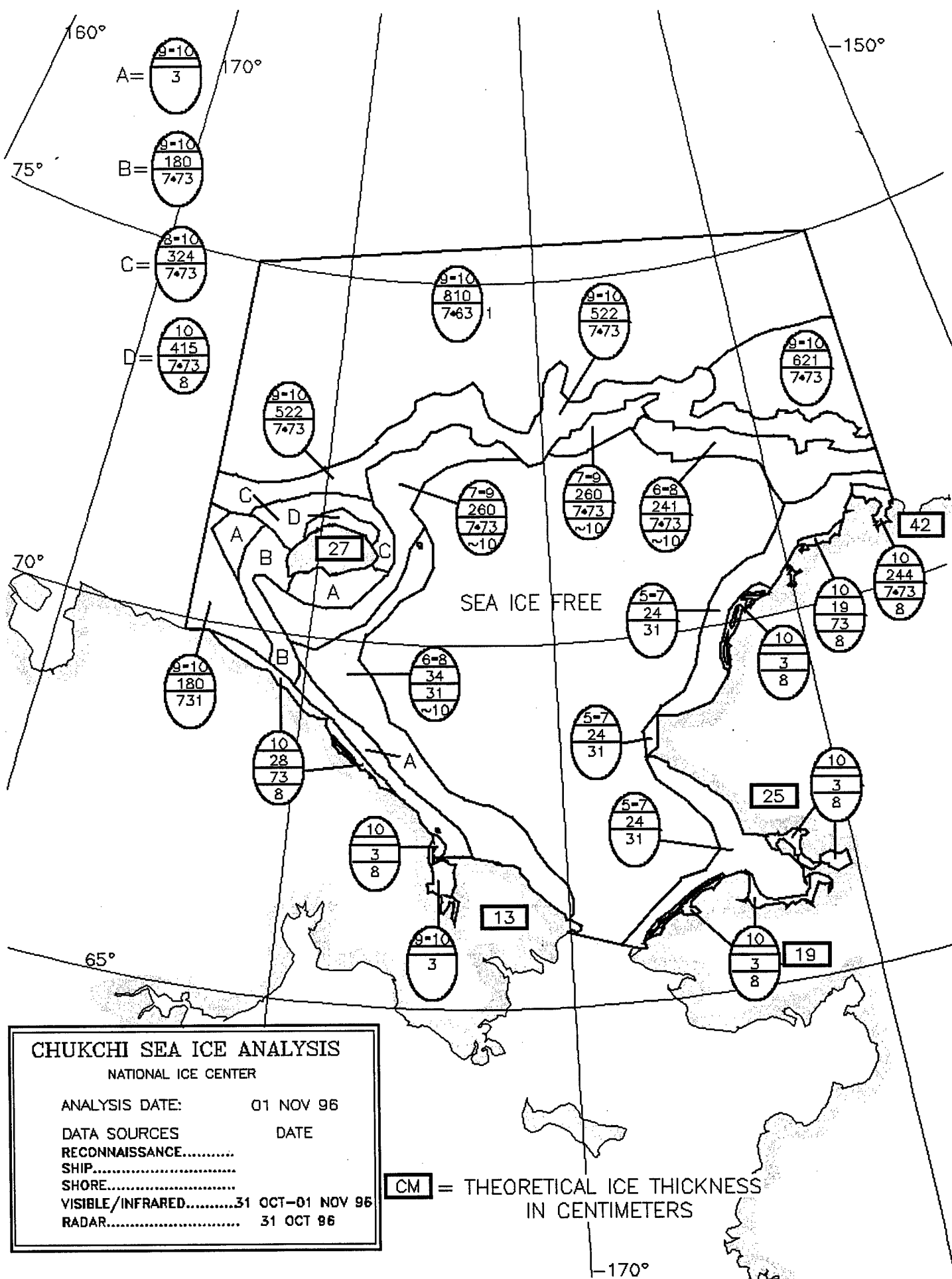


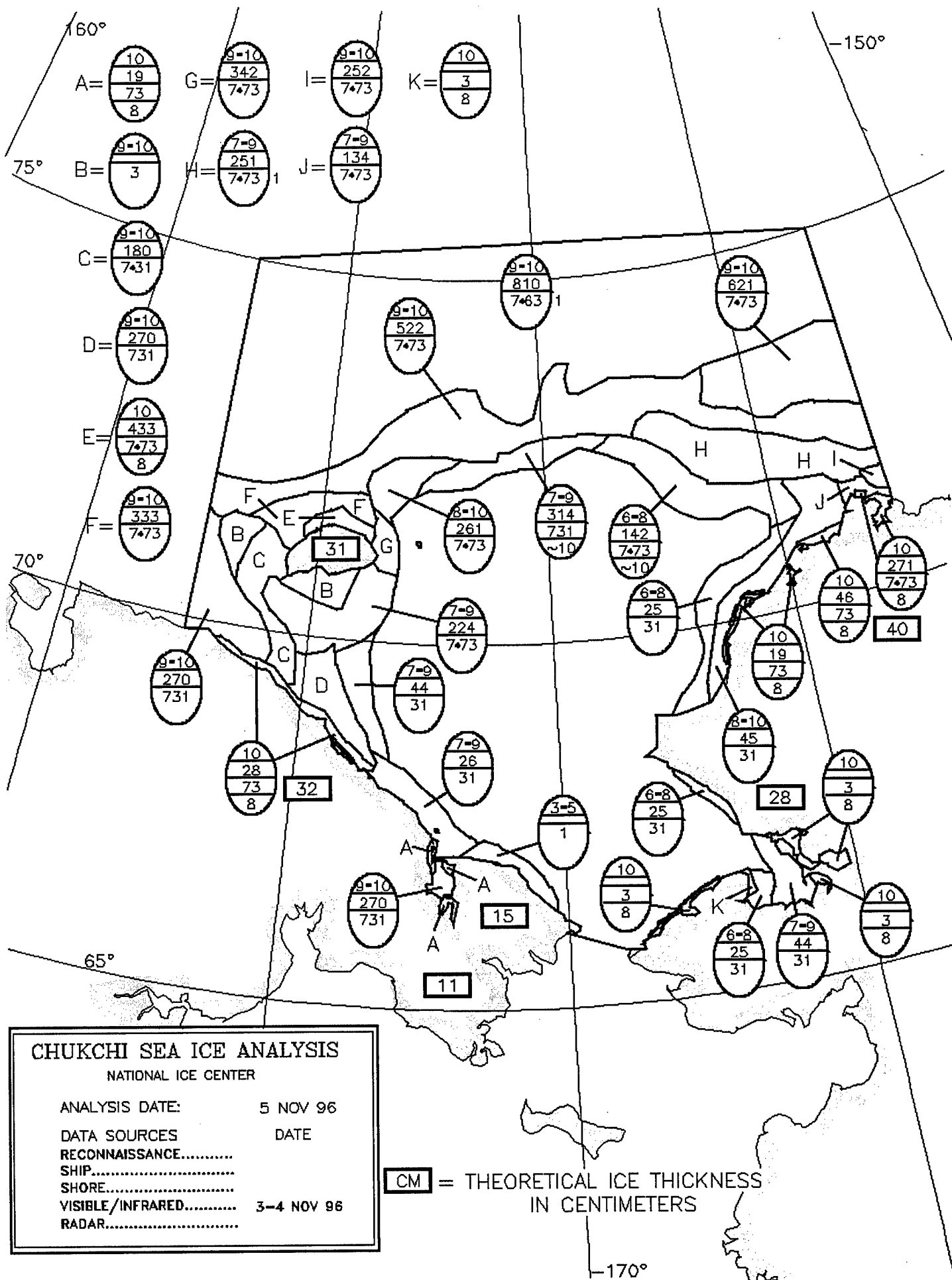


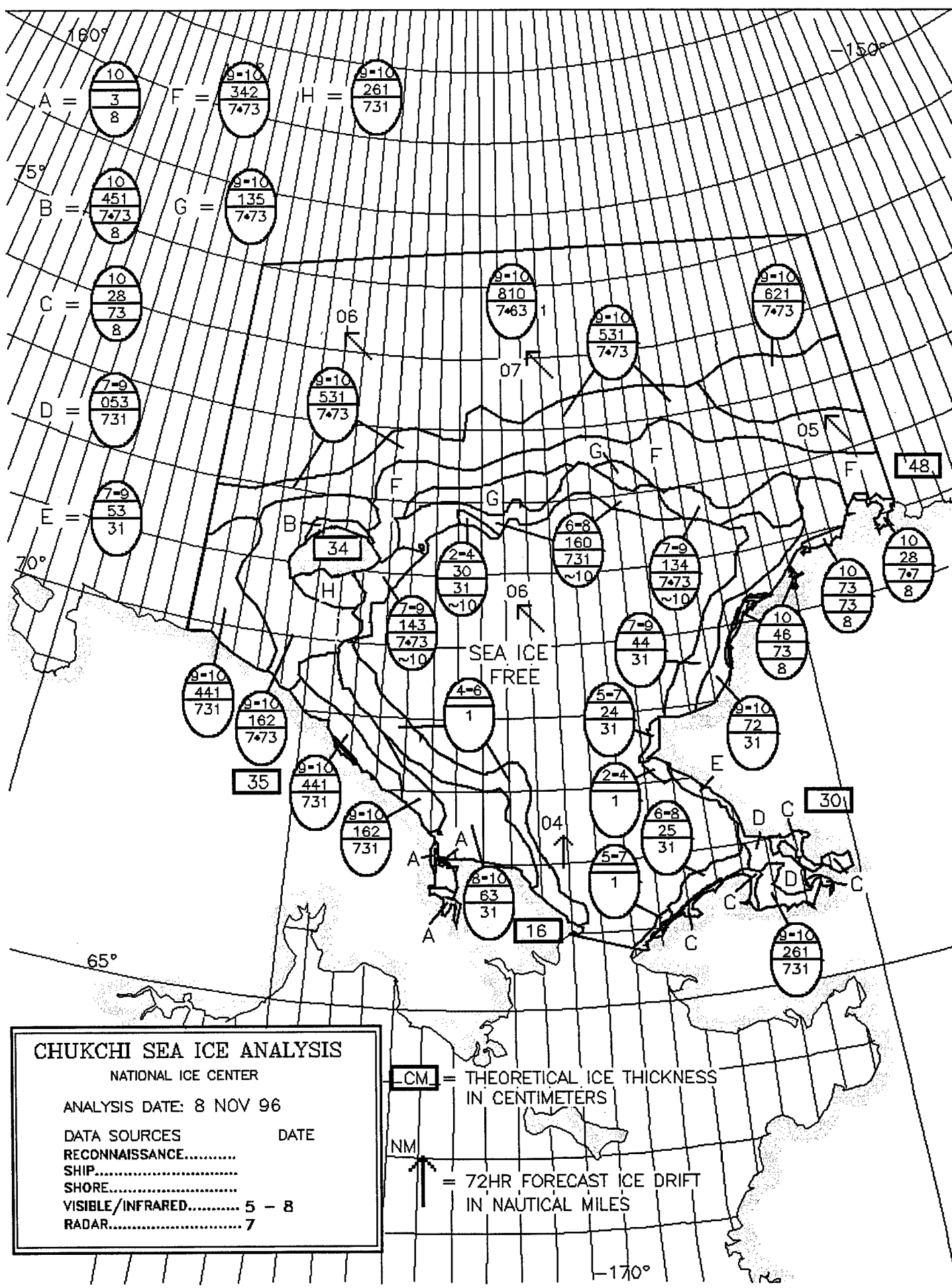












CHUKCHI SEA ICE ANALYSIS

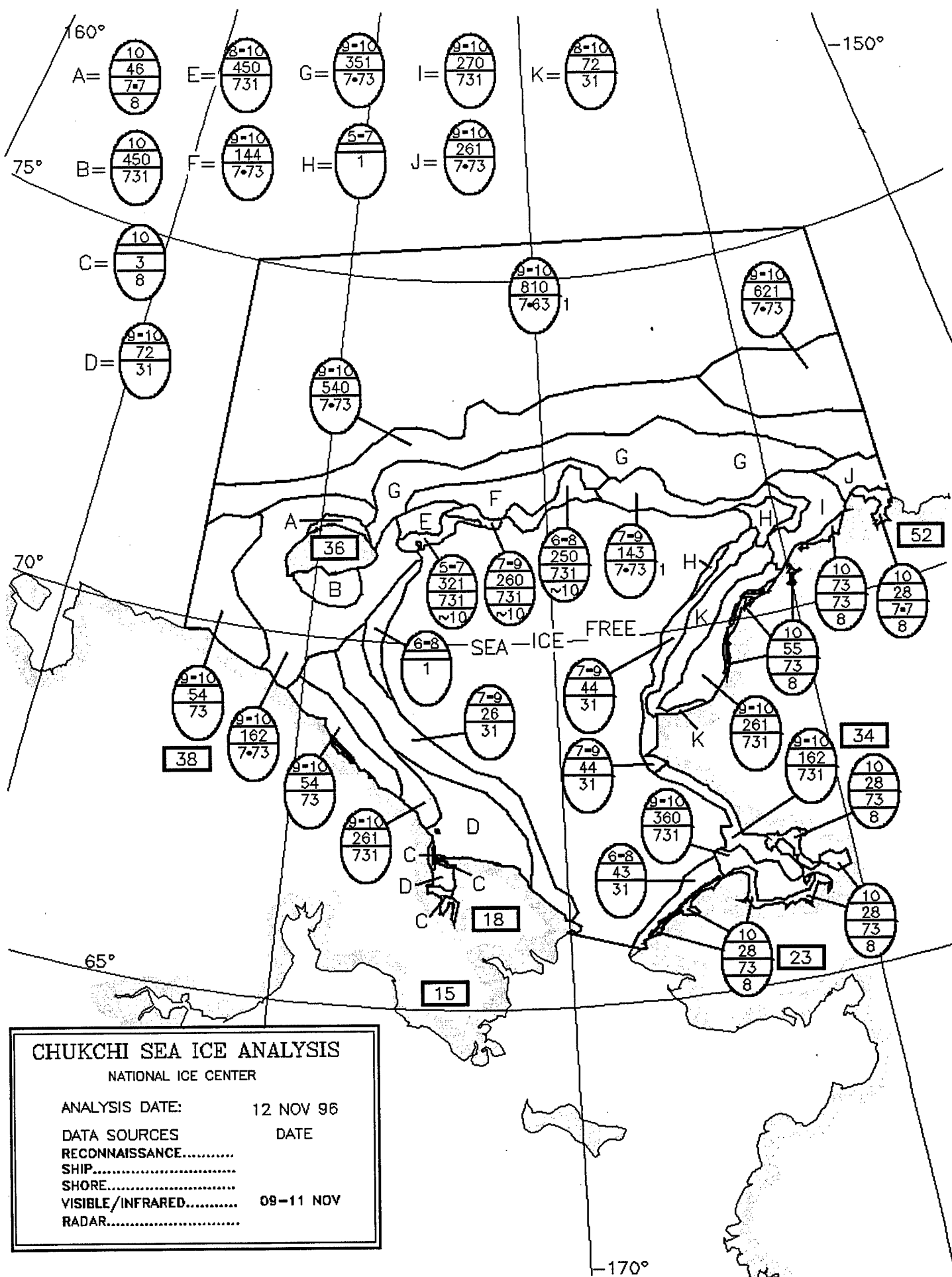
NATIONAL ICE CENTER

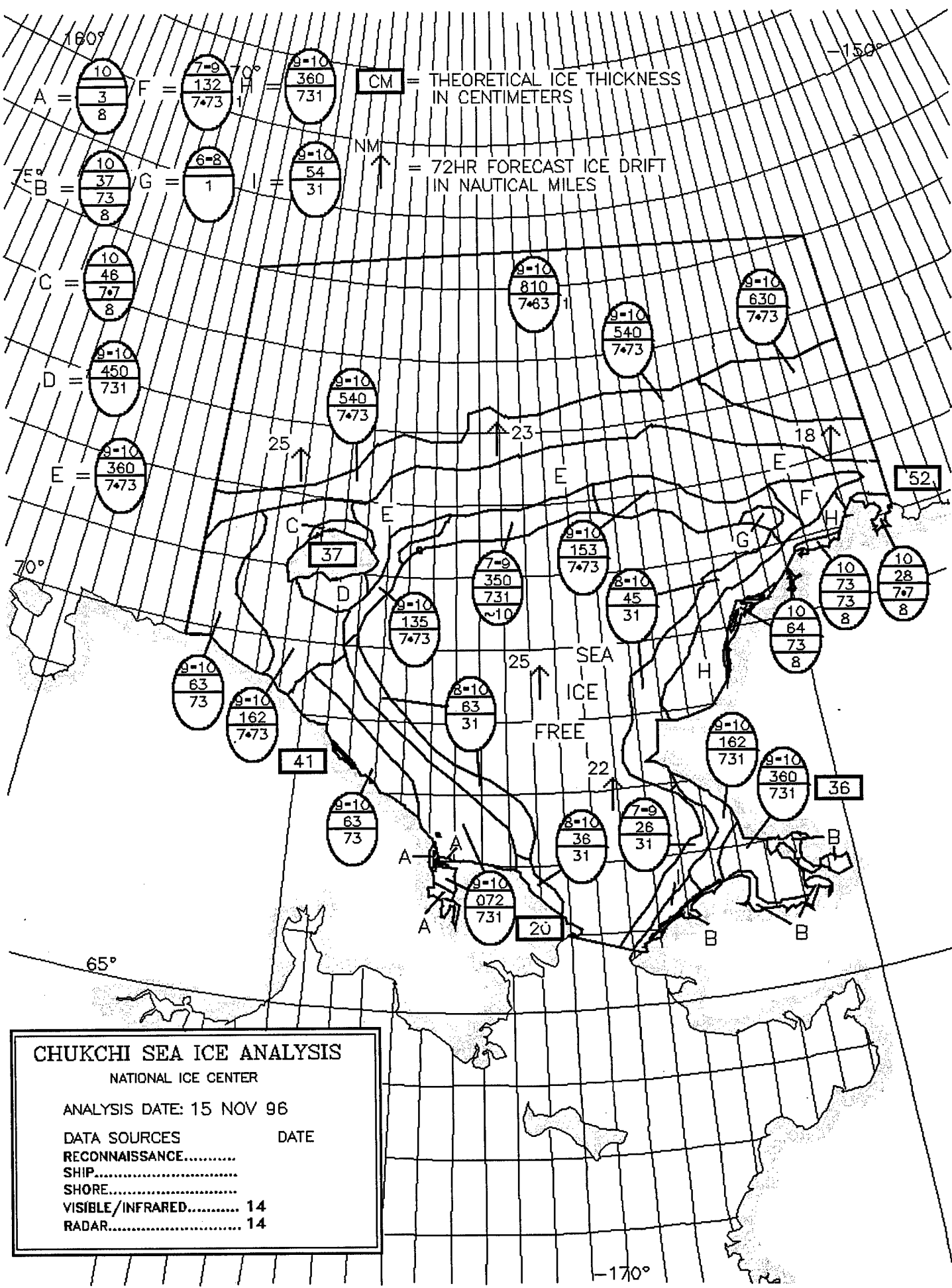
ANALYSIS DATE: 8 NOV 96

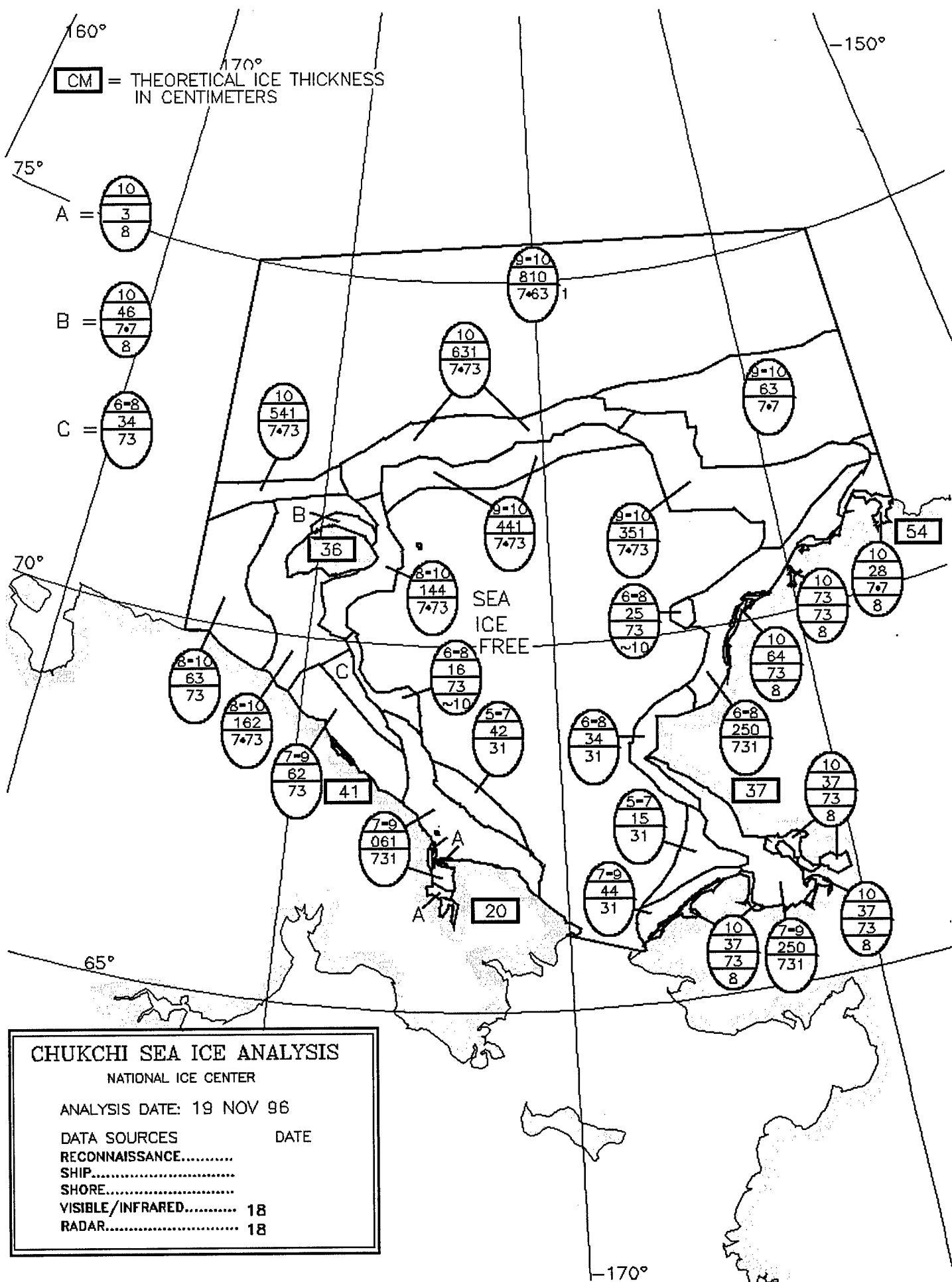
DATA SOURCES DATE
 RECONNAISSANCE.....
 SHIP.....
 SHORE.....
 VISIBLE/INFRARED..... 5 - 8
 RADAR..... 7

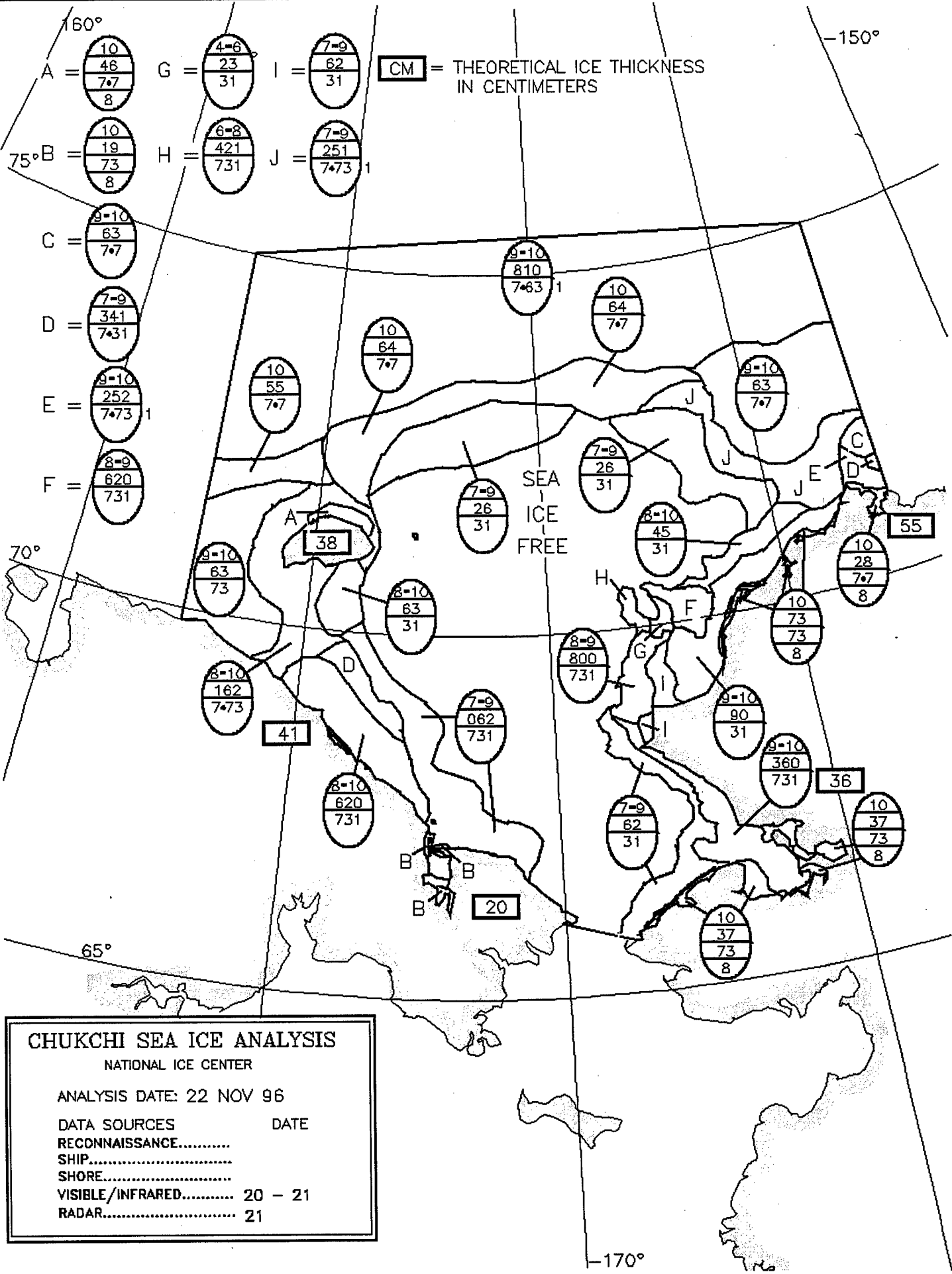
CM = THEORETICAL ICE THICKNESS
 IN CENTIMETERS

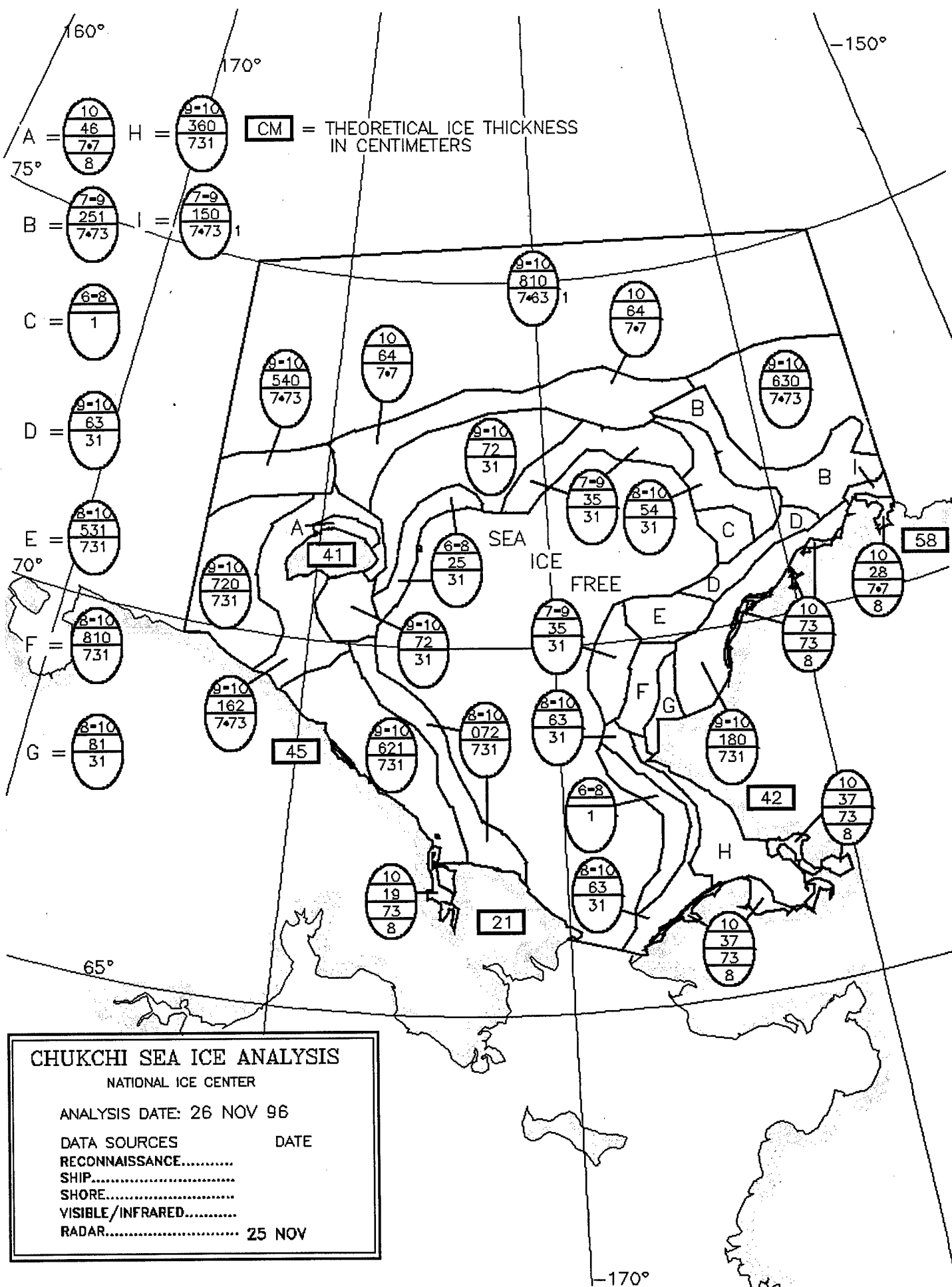
NM
 ↑ = 72HR FORECAST ICE DRIFT
 IN NAUTICAL MILES

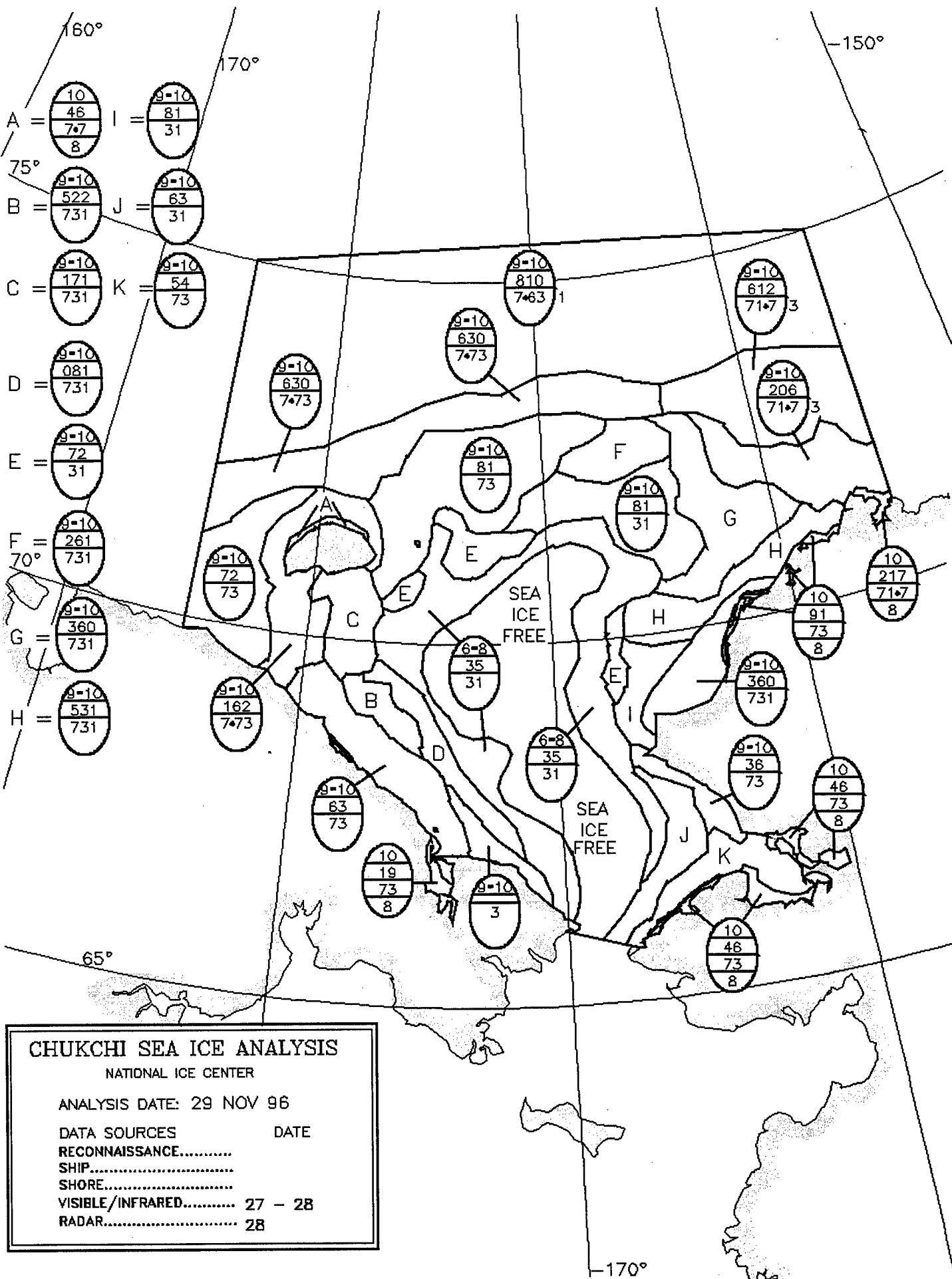


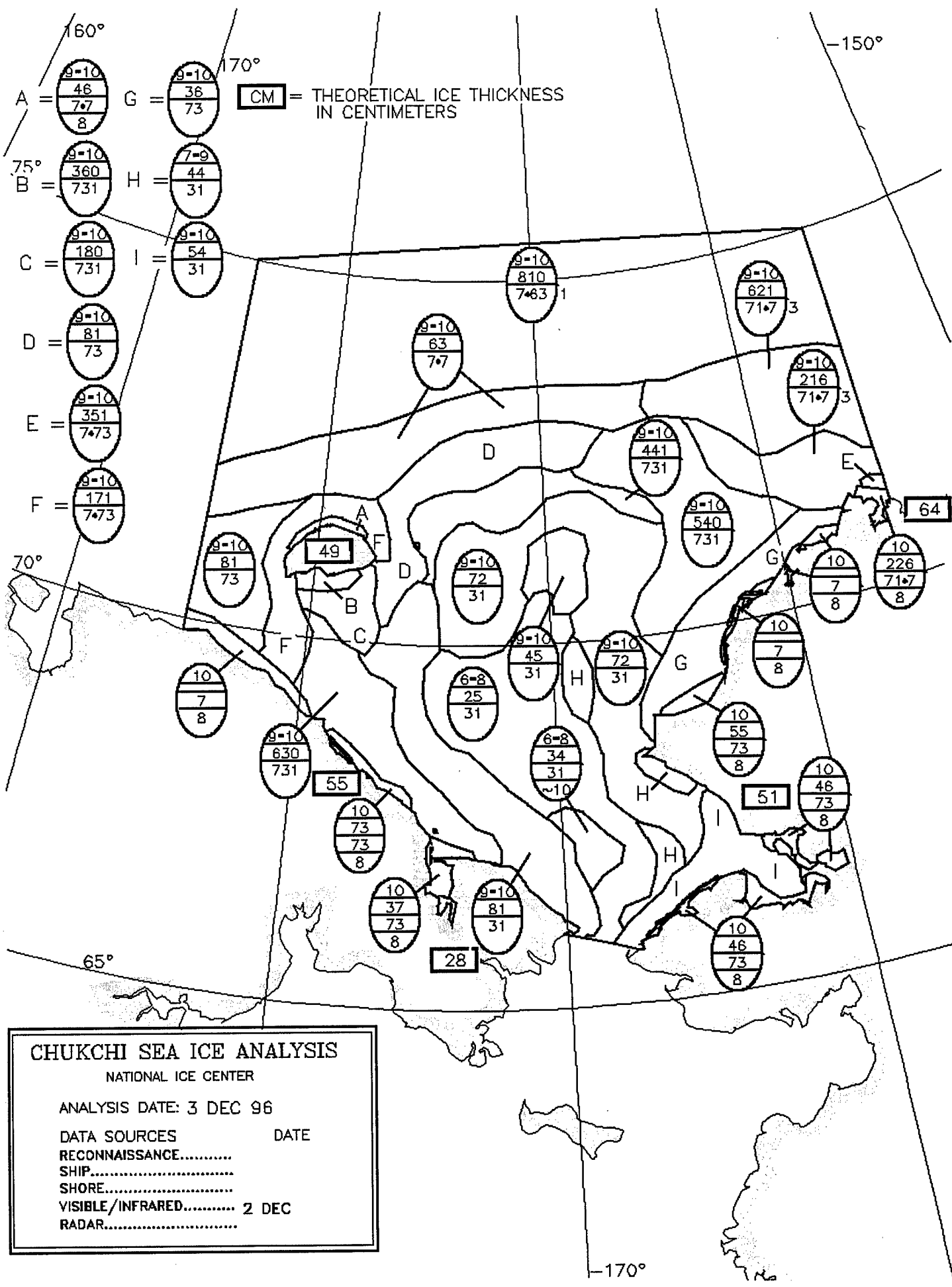


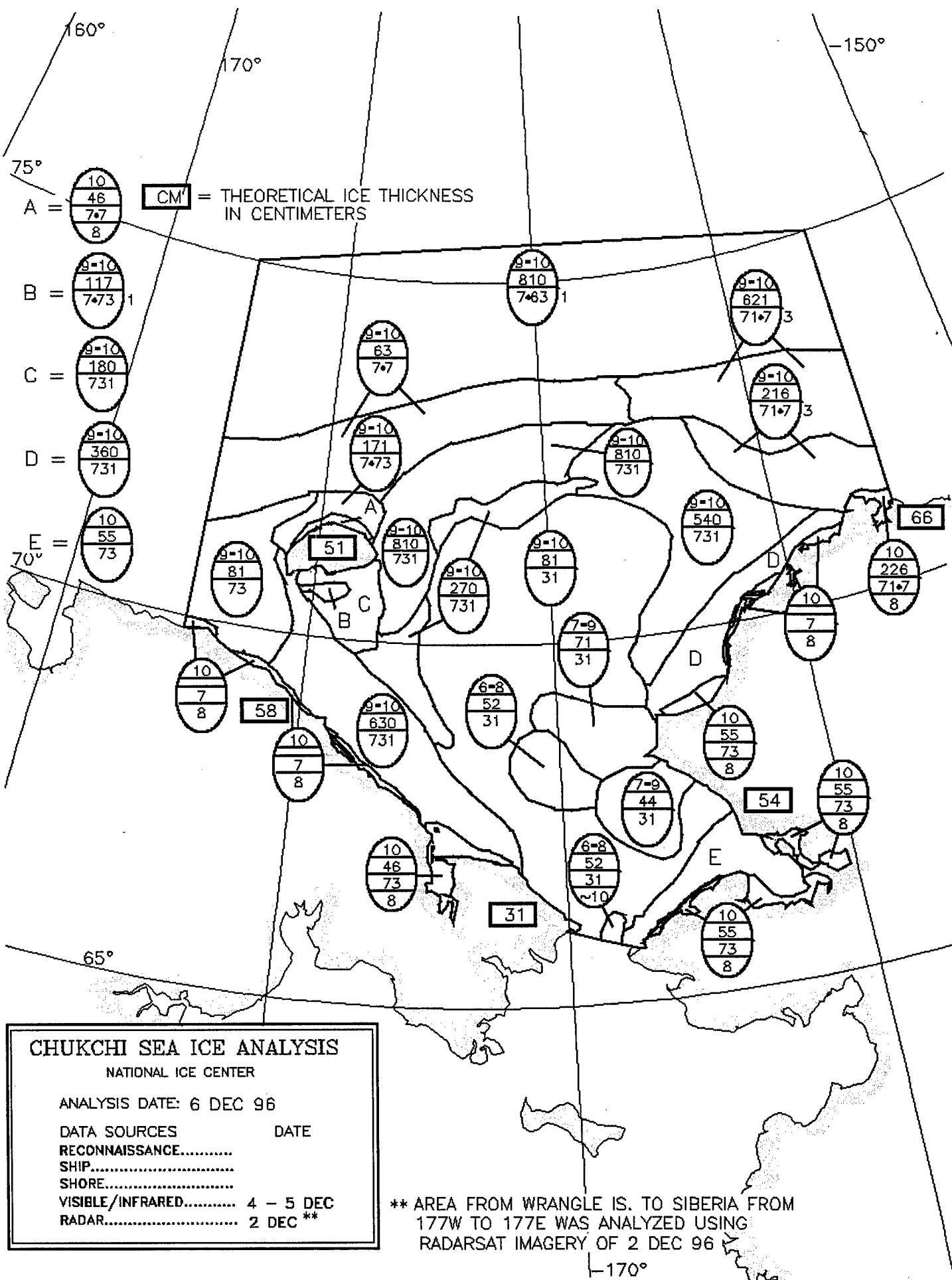


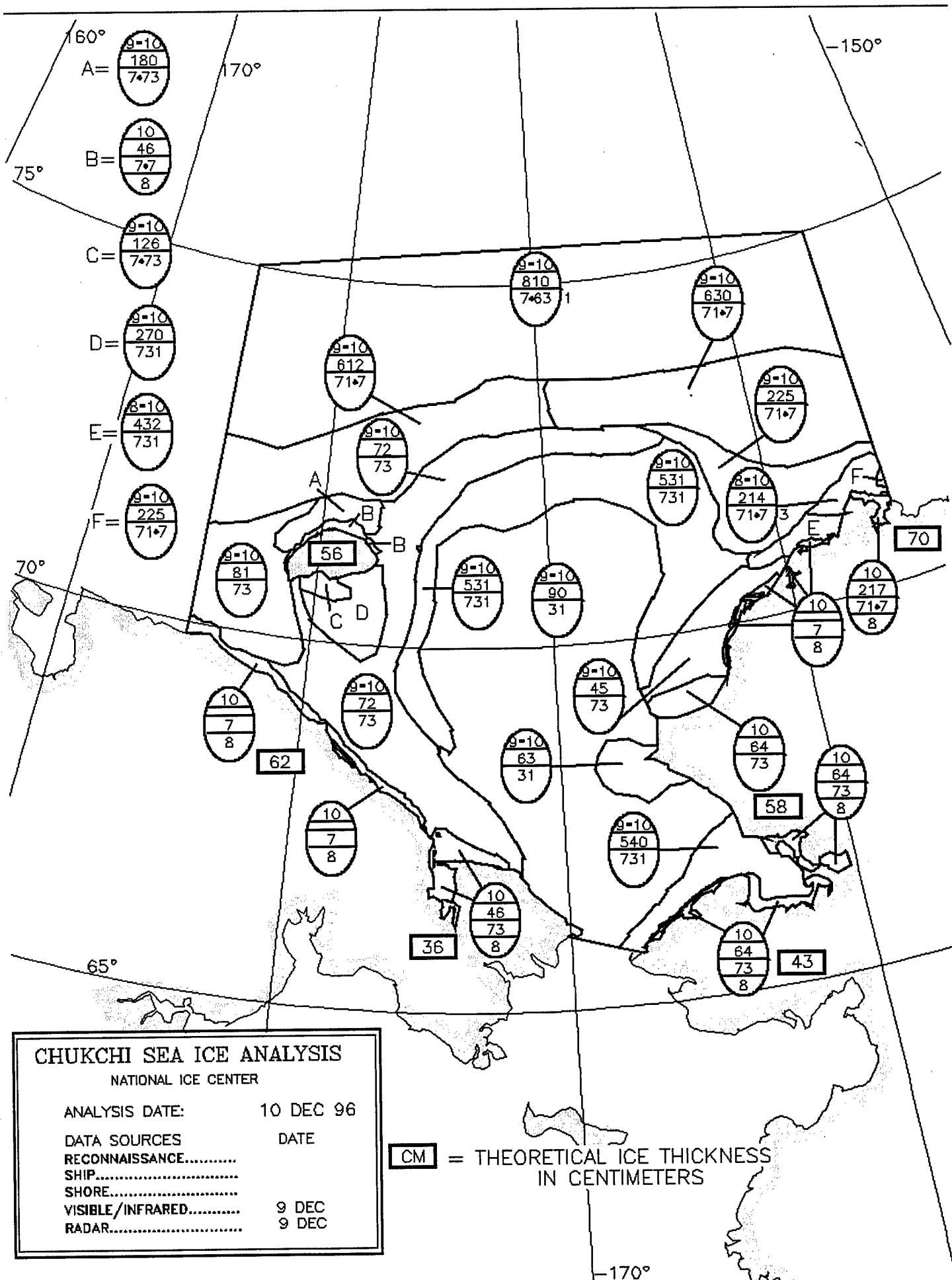


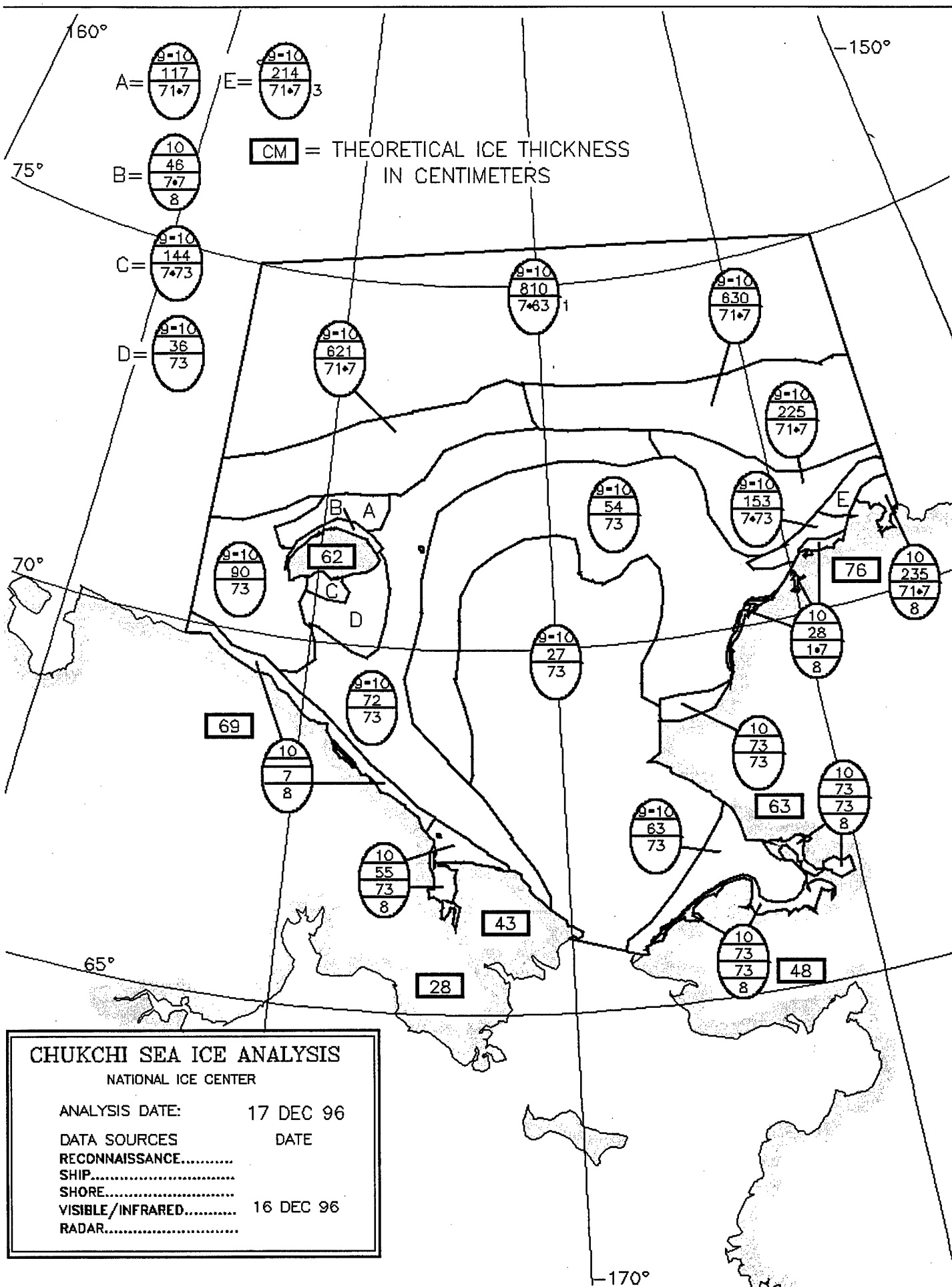


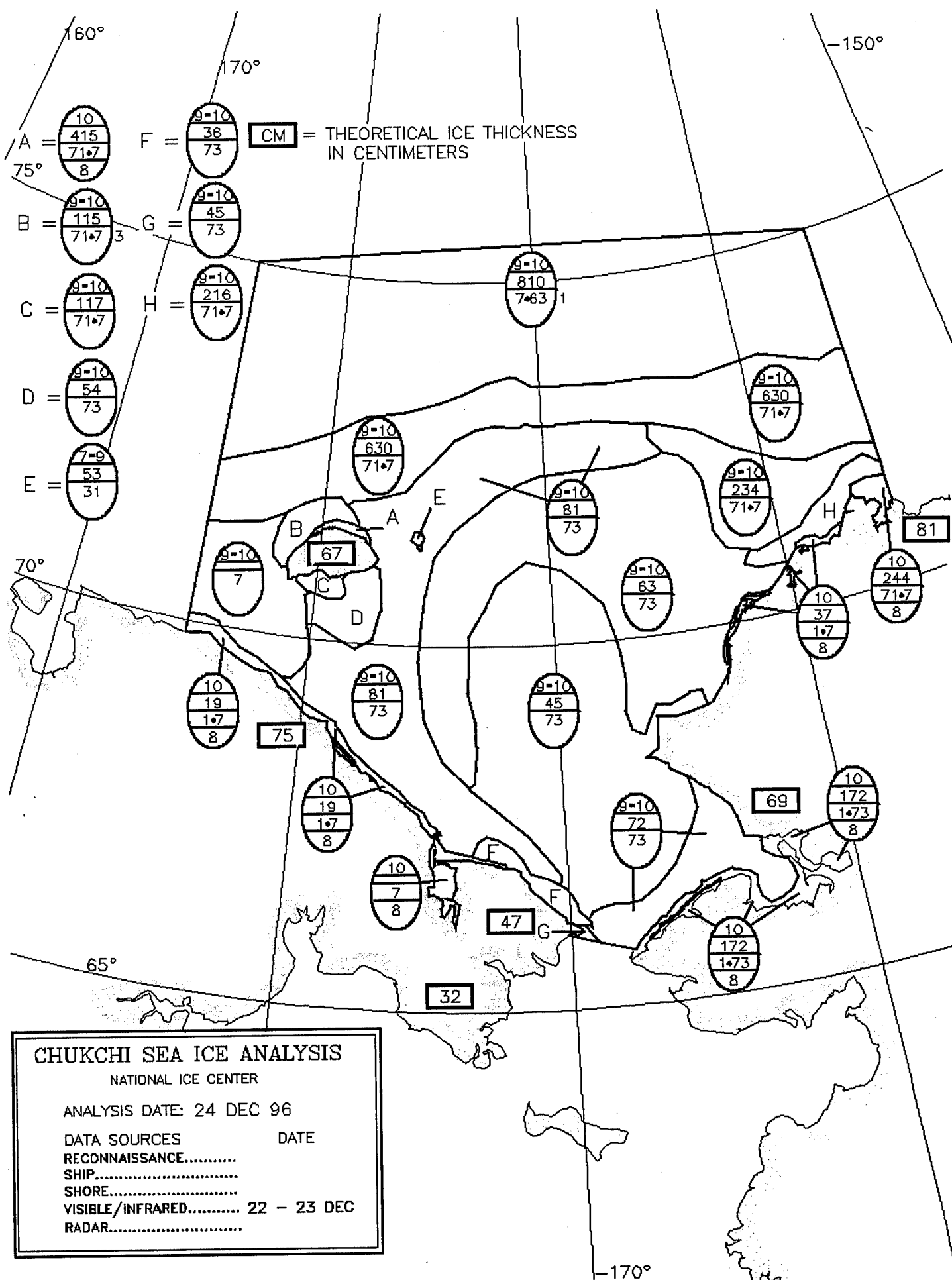


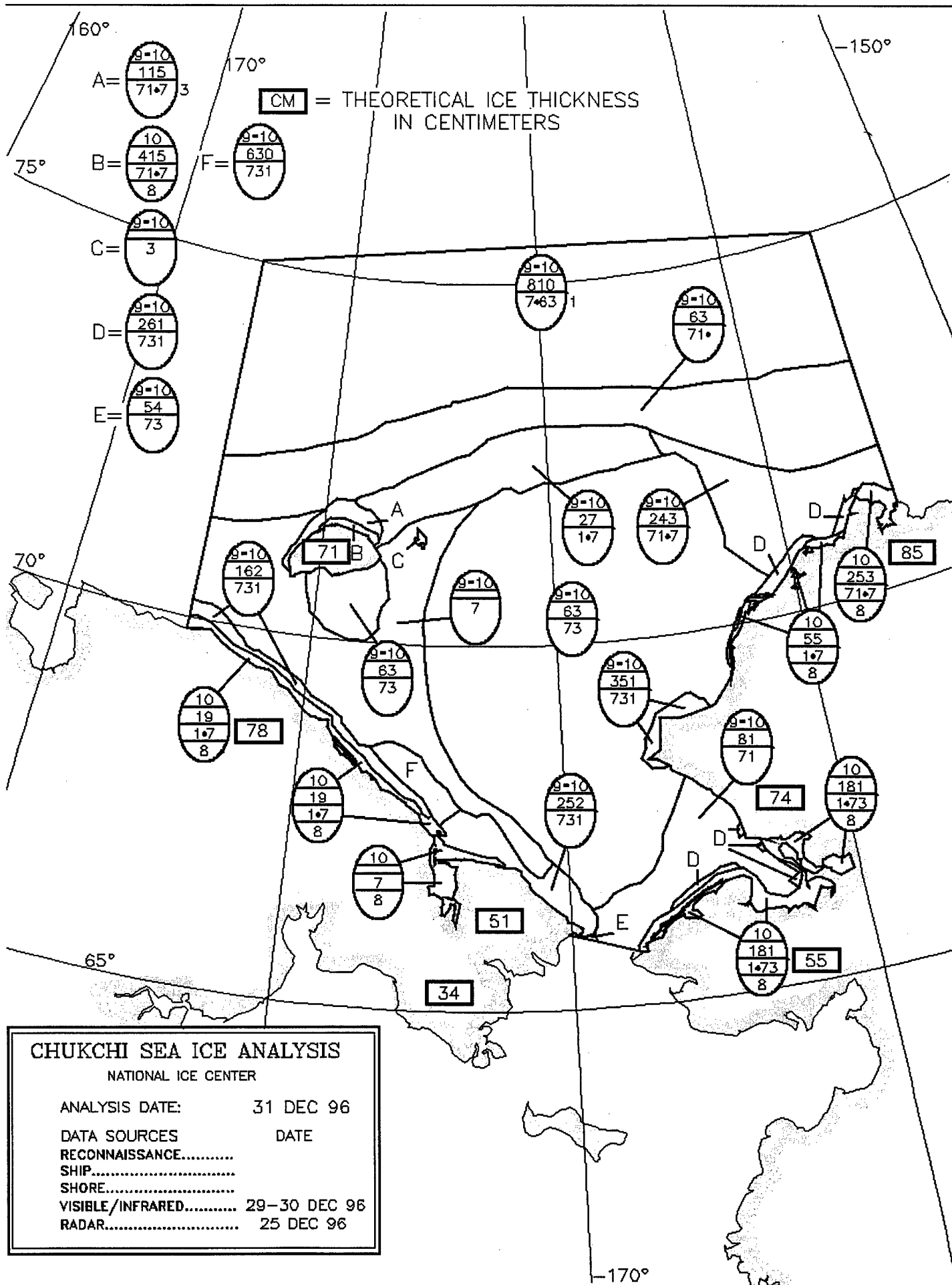


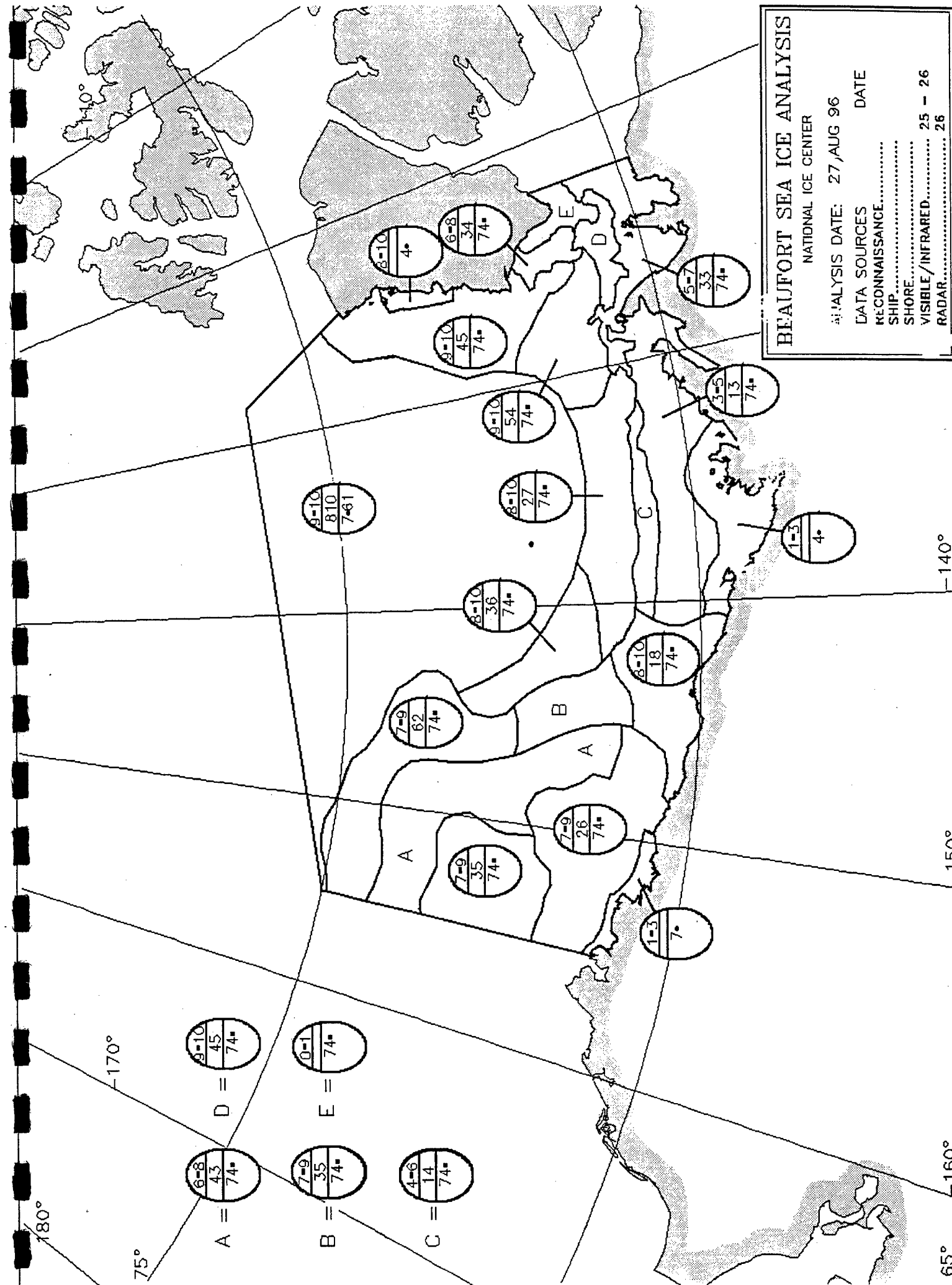












BEAUFORT SEA ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 27, AUG 96

DATA SOURCES

RECONNAISSANCE

SHIP

SHORE

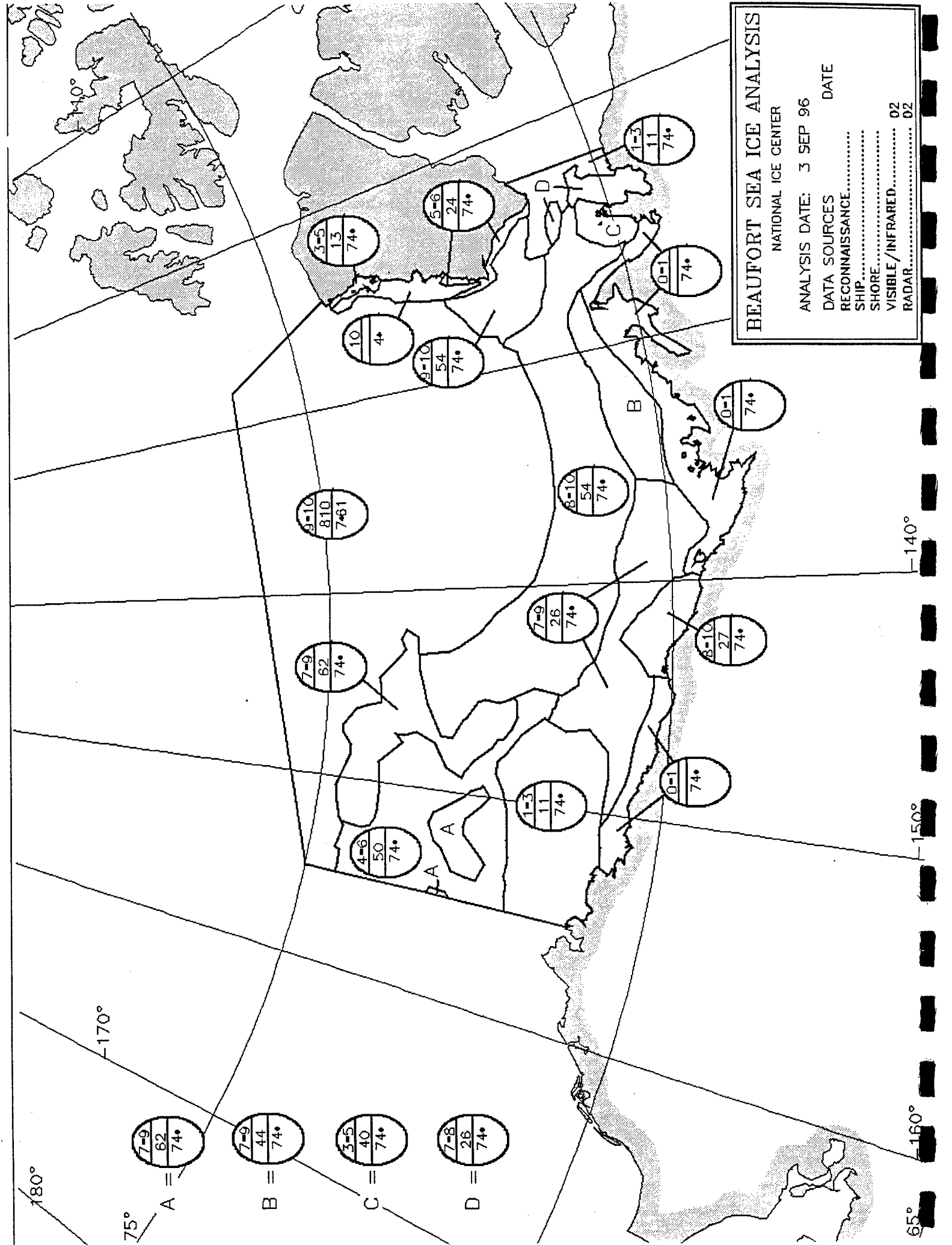
VISIBLE/INFRARED

RADAR

DATE

25 - 26

26

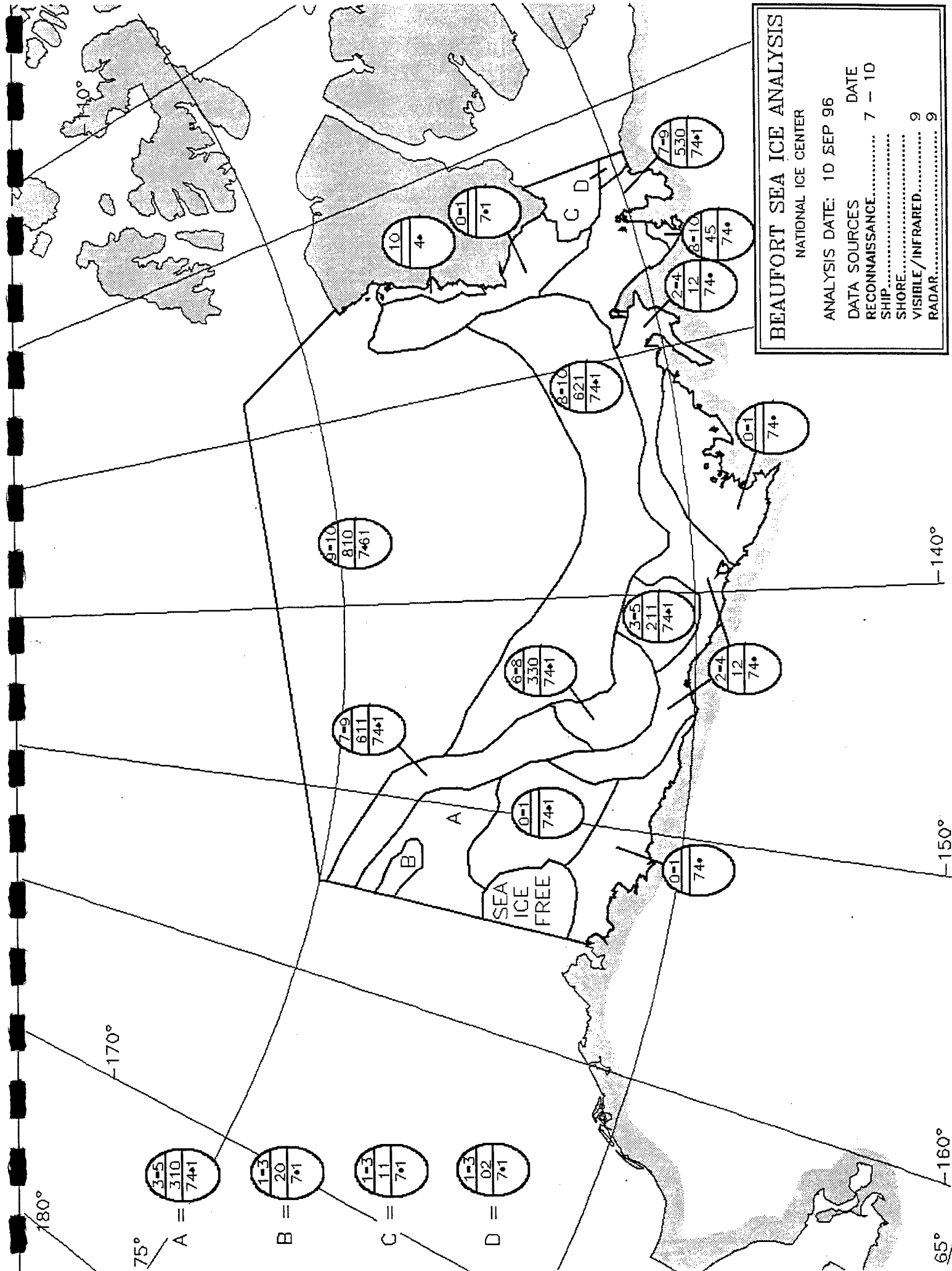


BEAUFORT SEA ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 3 SEP 96 DATE
 DATA SOURCES
 RECONNAISSANCE
 SHIP
 SHORE
 VISIBLE/INFRARED
 RADAR

02
 02



BEAUFORT SEA ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 10 SEP 96

DATA SOURCES

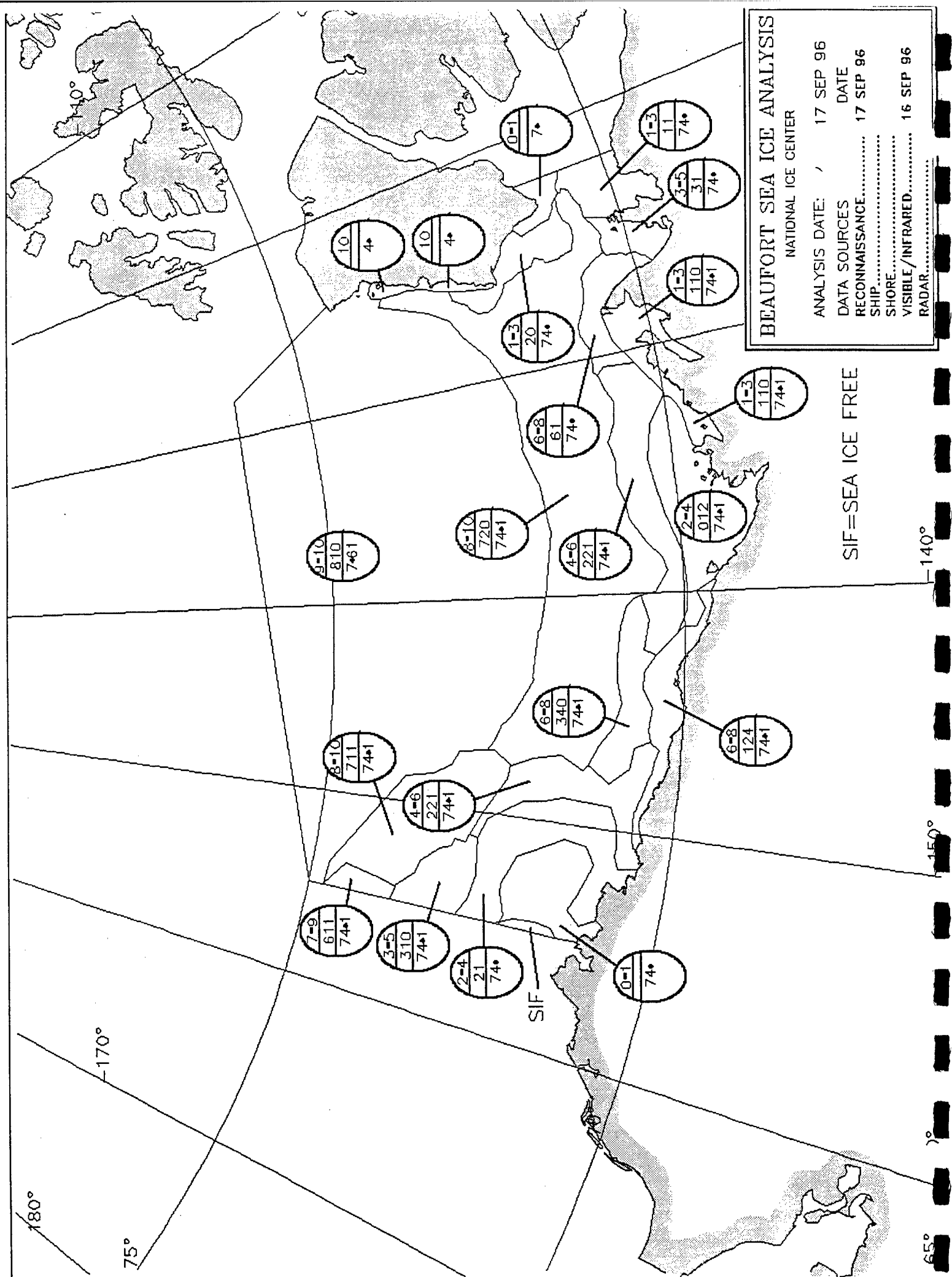
RECONNAISSANCE..... 7 - 10

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 9

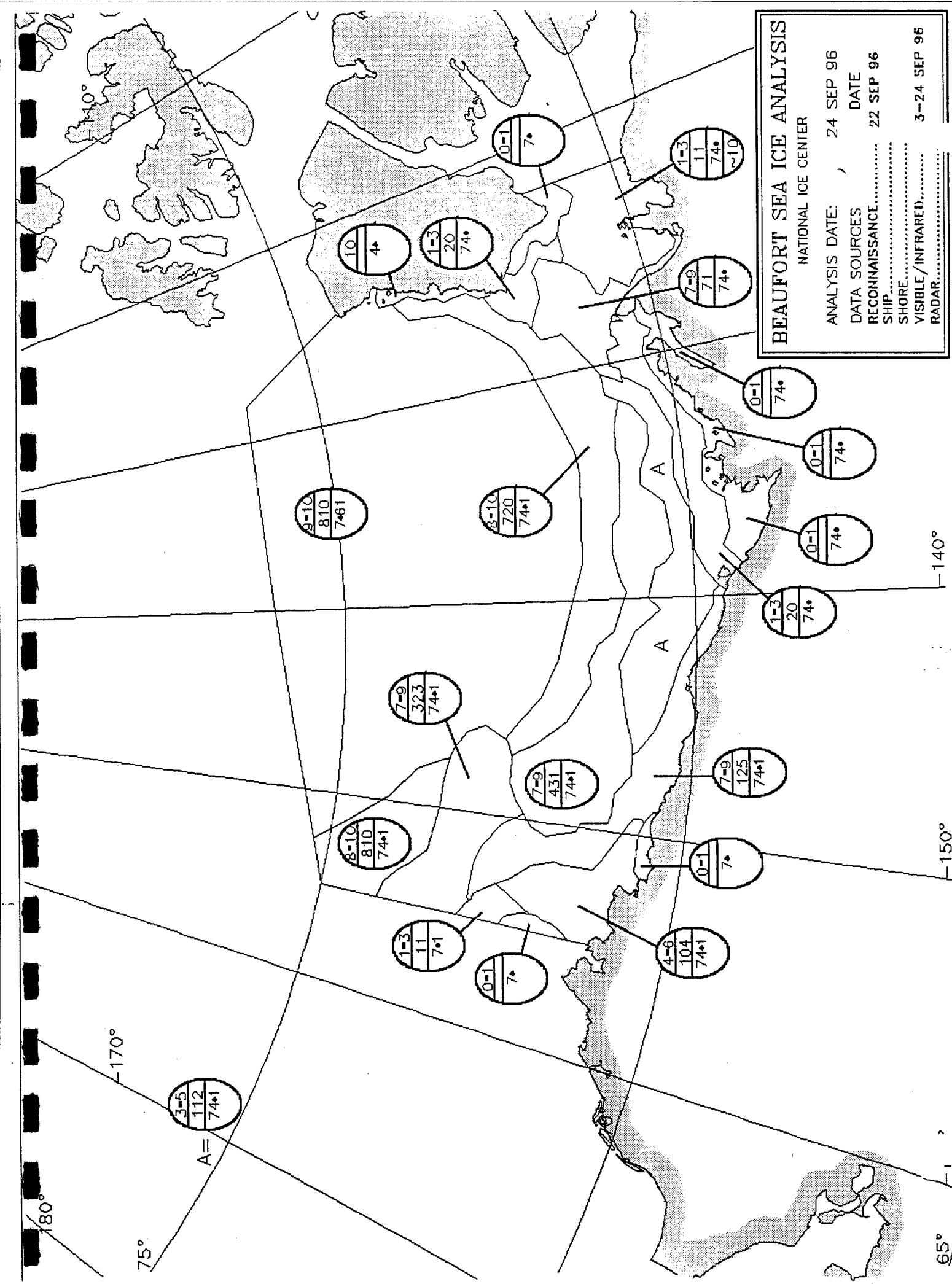
RADAR..... 9



BEAUFORT SEA ICE ANALYSIS NATIONAL ICE CENTER

ANALYSIS DATE: / 17 SEP 96
 DATA SOURCES DATE
 RECONNAISSANCE..... 17 SEP 96
 SHIP.....
 SHORE.....
 VISIBLE/INFRARED..... 16 SEP 96
 RADAR.....

SIF=SEA ICE FREE



3-5
112
74+1

1-3
11
7+1

0-1
7+1

4-6
104
74+1

0-1
7+1

7-9
125
74+1

7-9
431
74+1

7-9
323
74+1

8-10
810
74+1

8-10
810
74+1

8-10
720
74+1

1-3
20
74+1

0-1
74+1

0-1
74+1

0-1
74+1

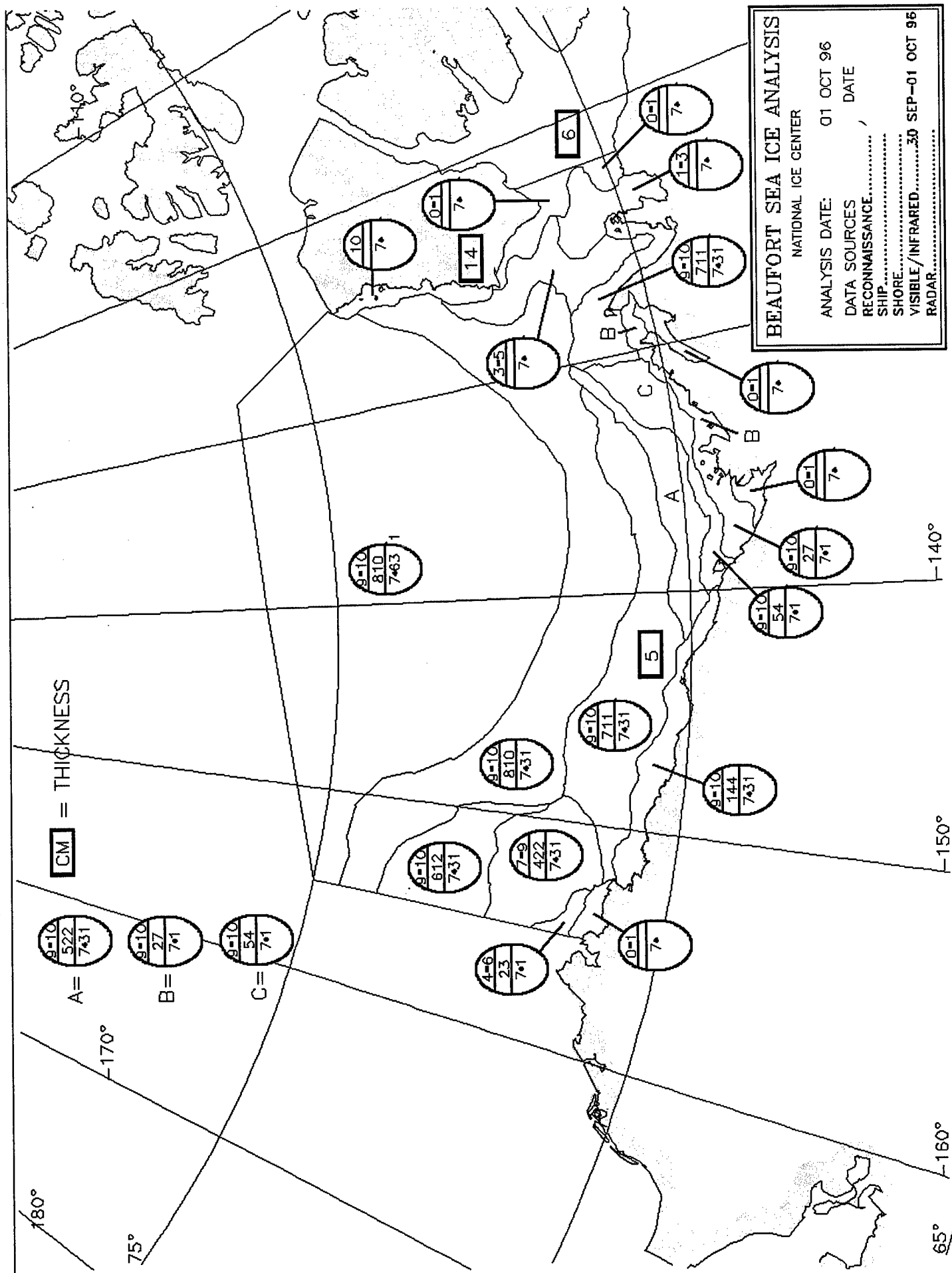
7-9
71
74+1

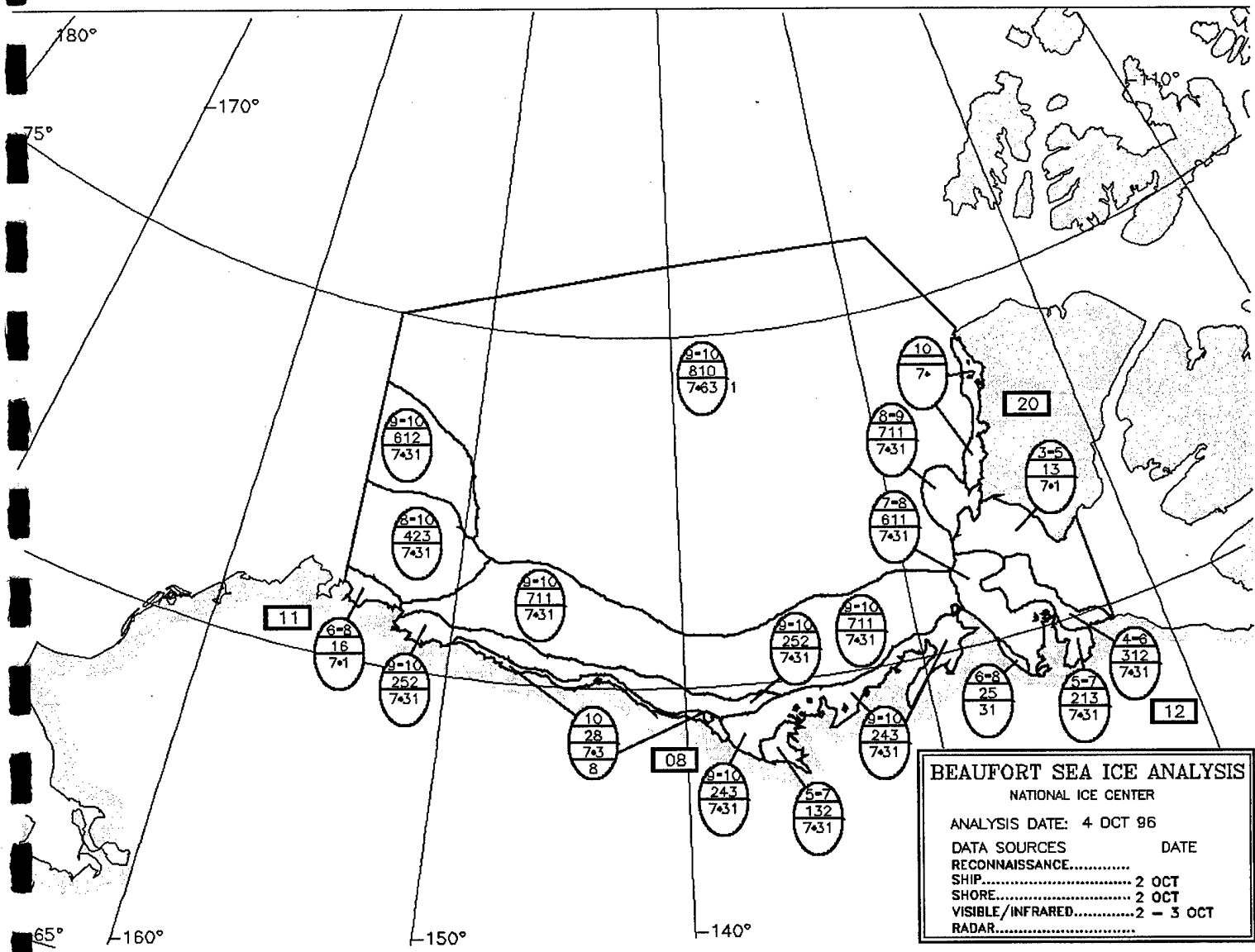
1-3
11
74+1
~10

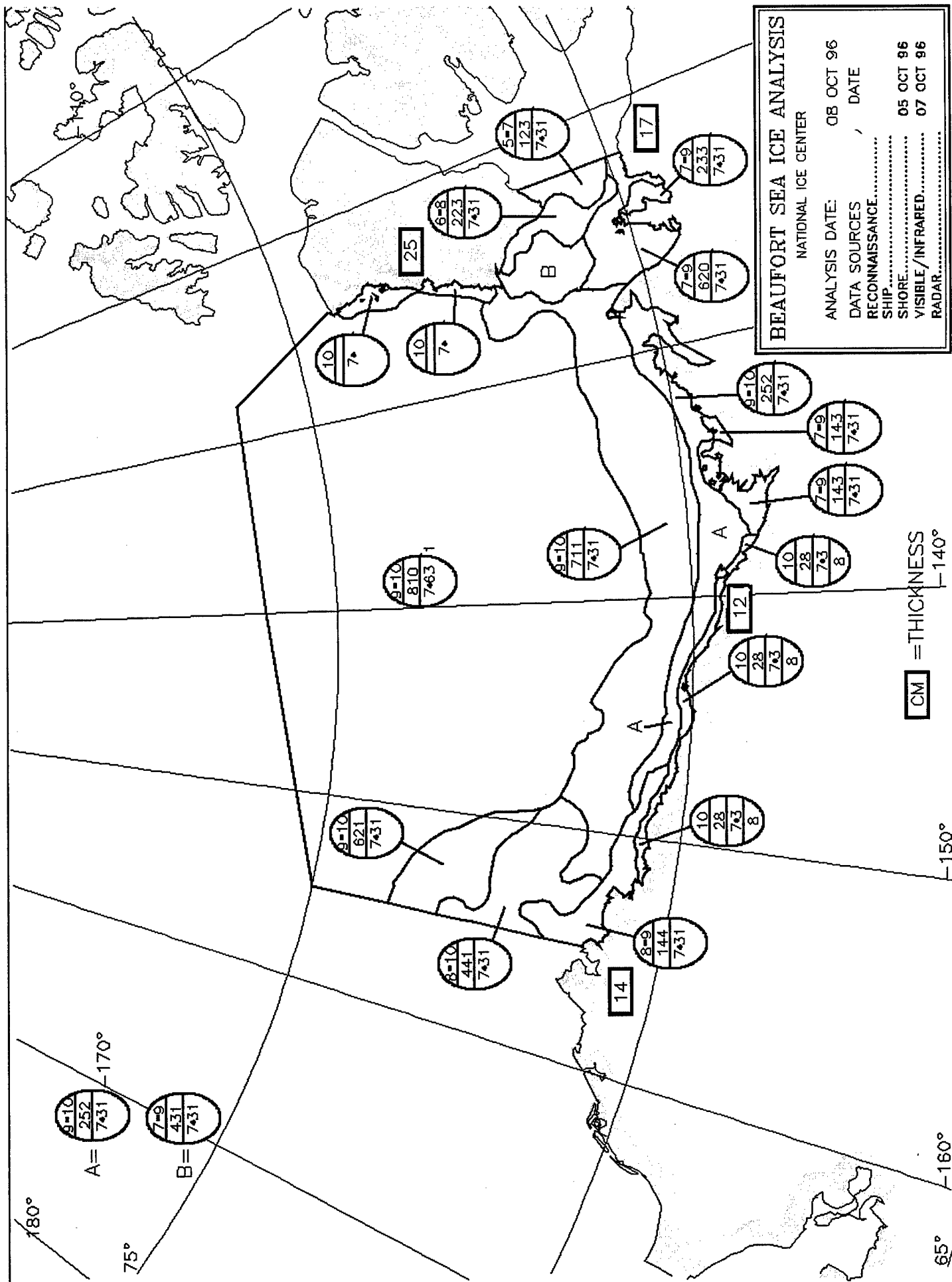
1-3
20
74+1

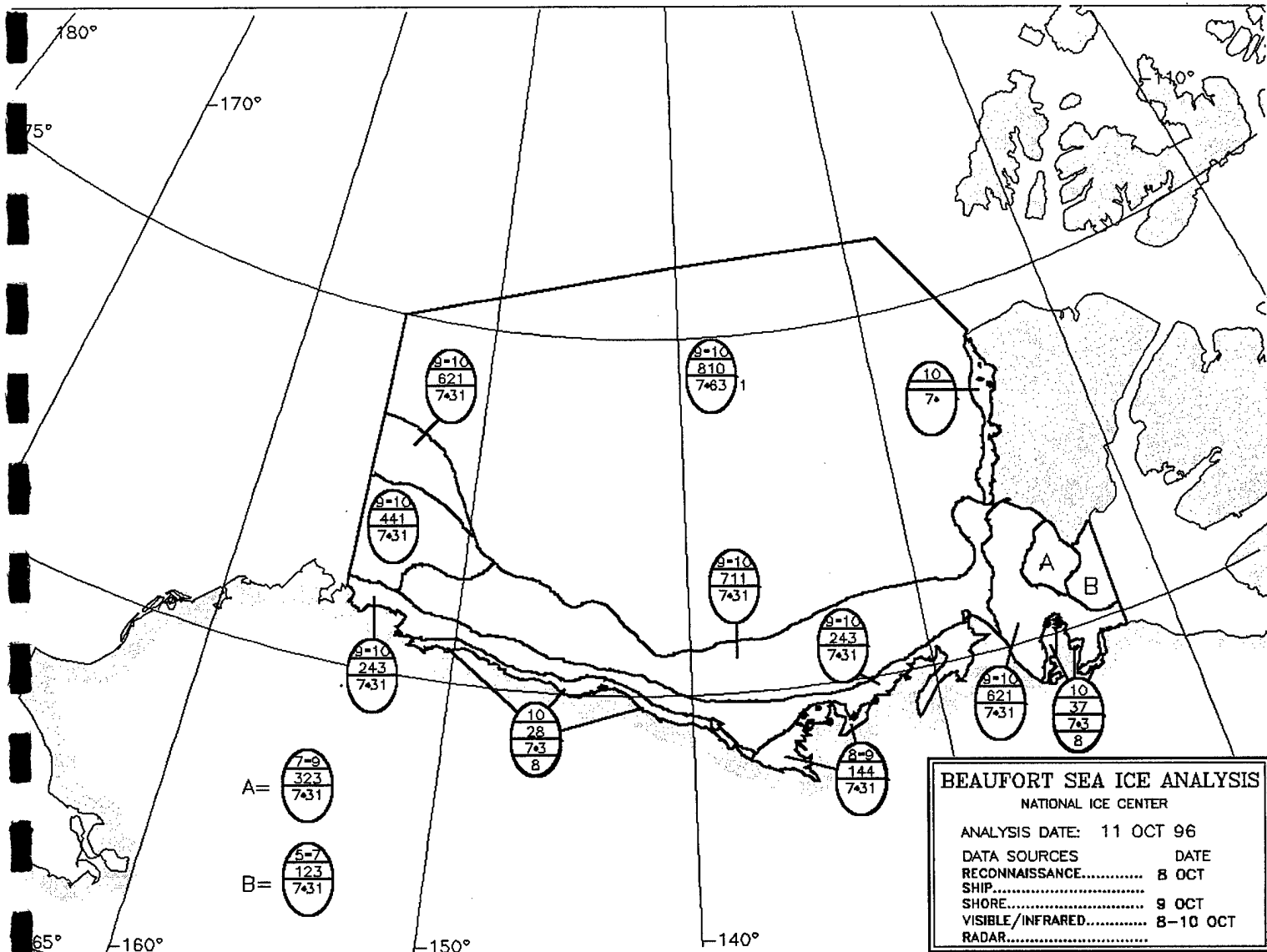
10
4+1

0-1
7+1





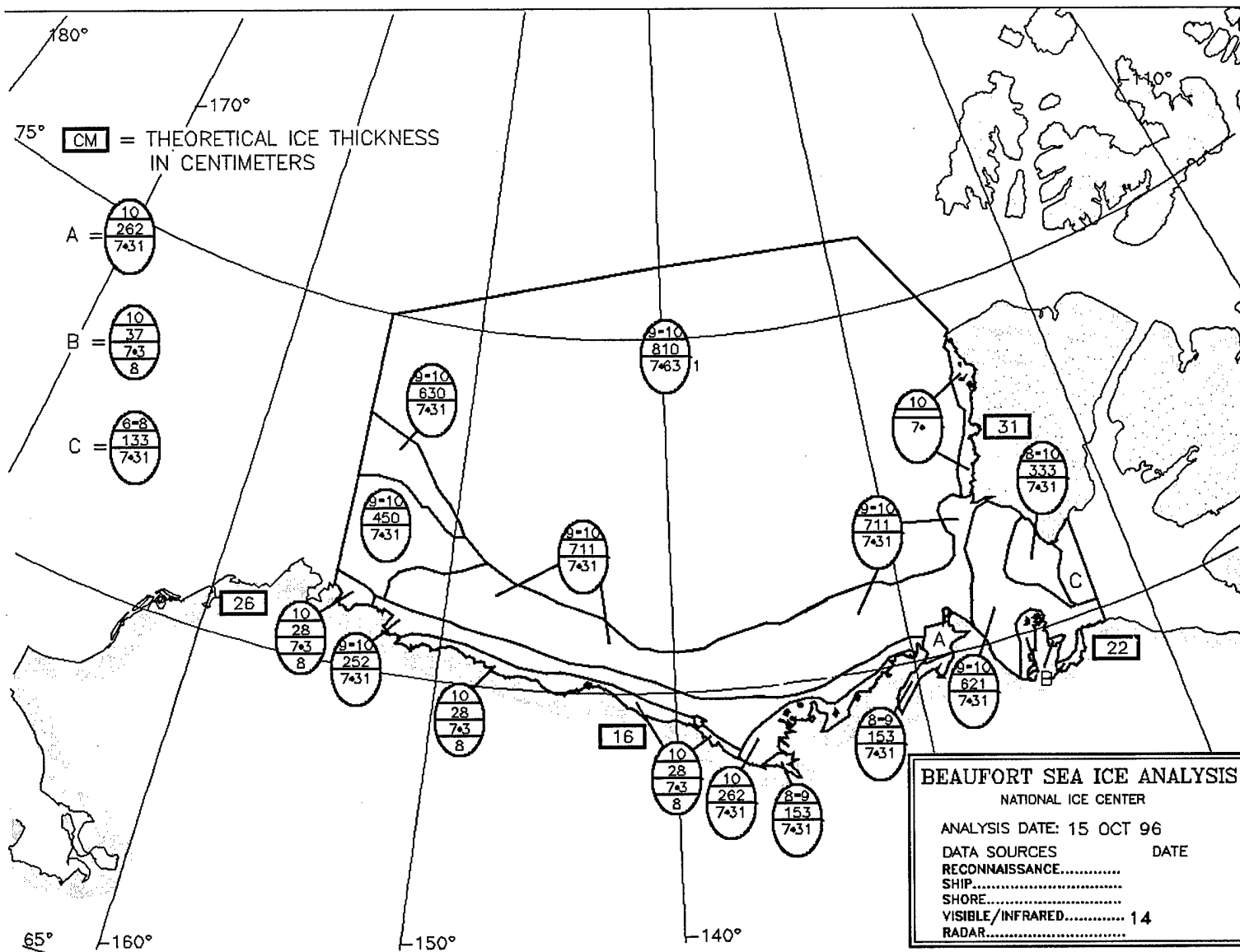


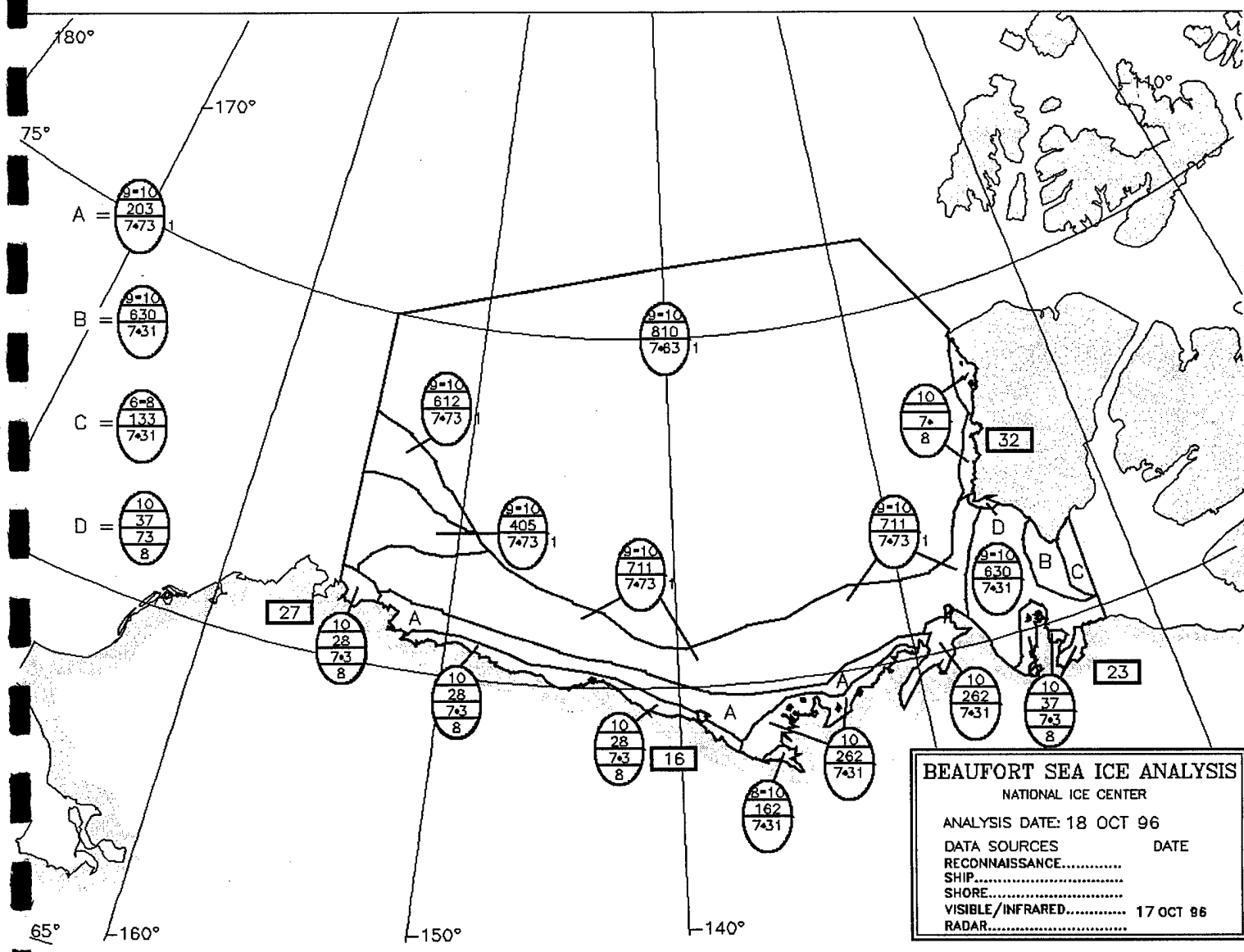


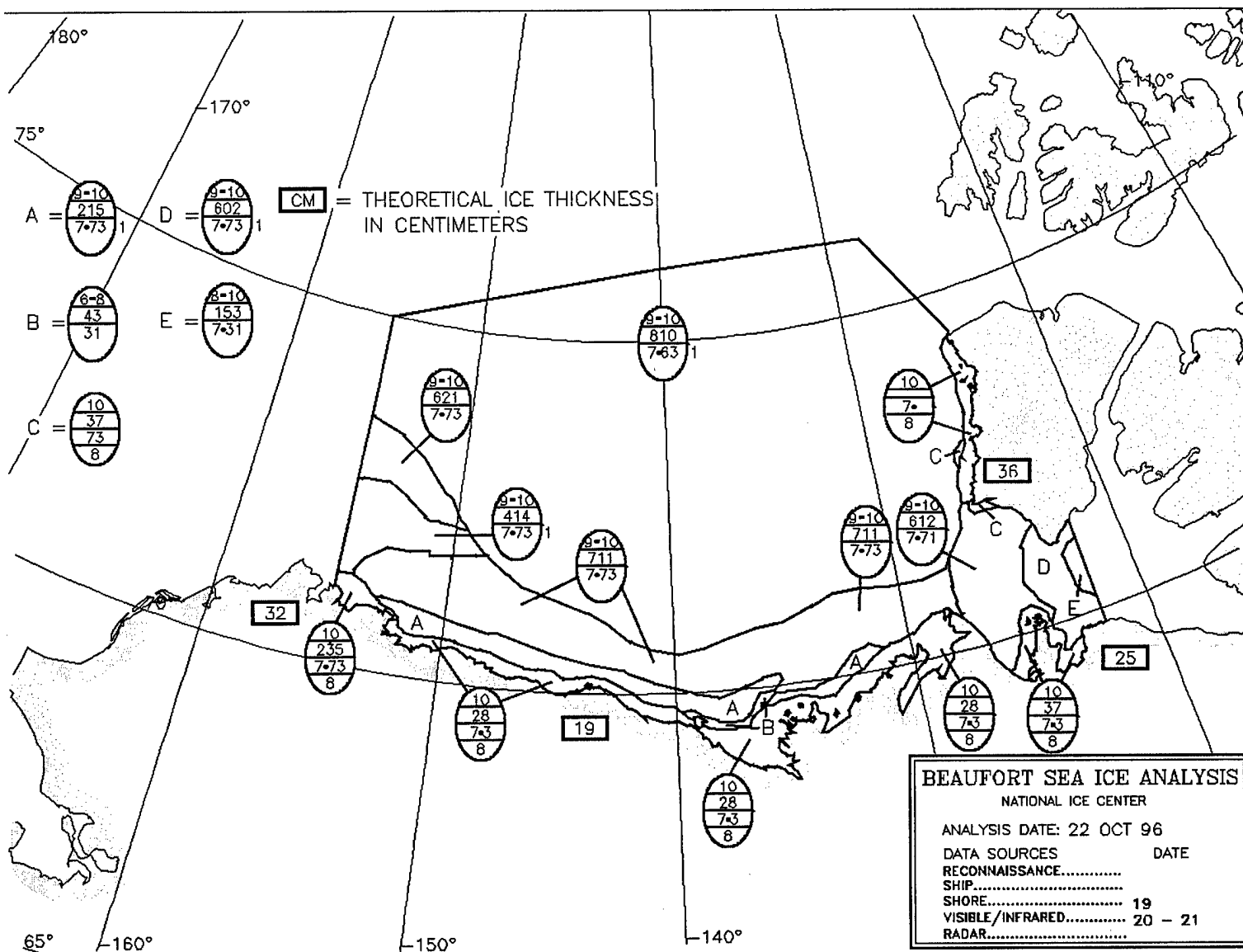
BEAUFORT SEA ICE ANALYSIS
 NATIONAL ICE CENTER

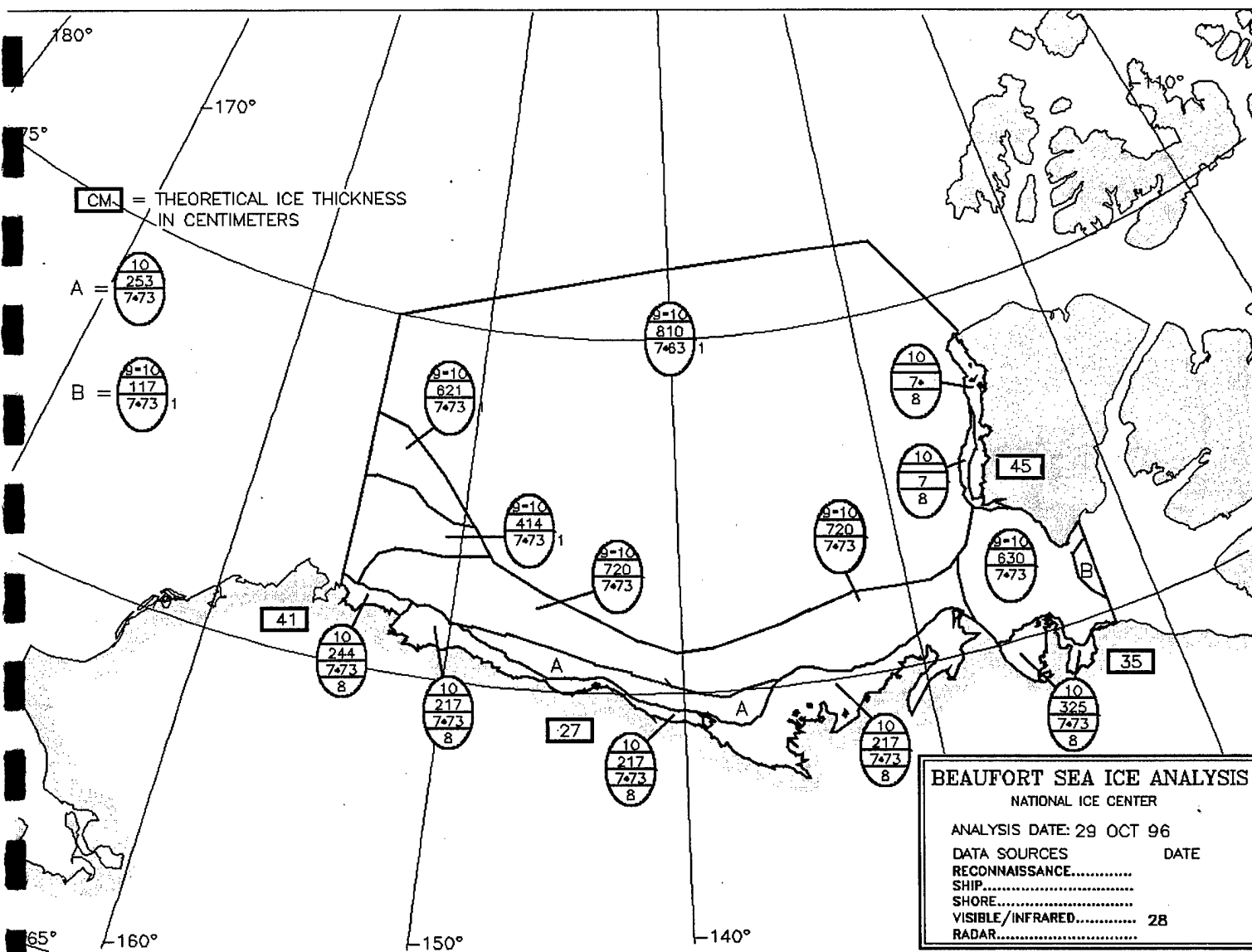
ANALYSIS DATE: 11 OCT 96

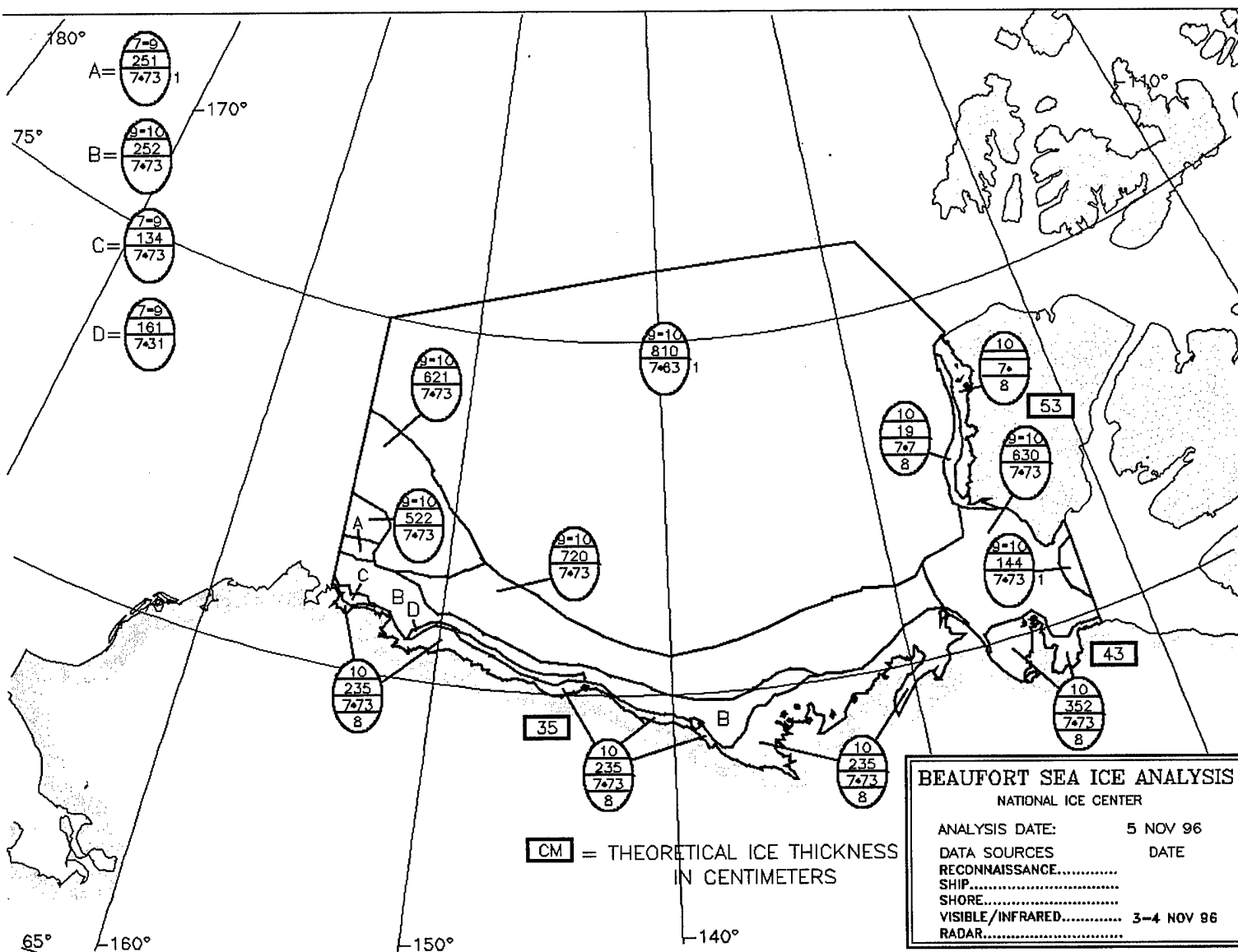
DATA SOURCES	DATE
RECONNAISSANCE.....	8 OCT
SHIP.....	
SHORE.....	9 OCT
VISIBLE/INFRARED.....	8-10 OCT
RADAR.....	

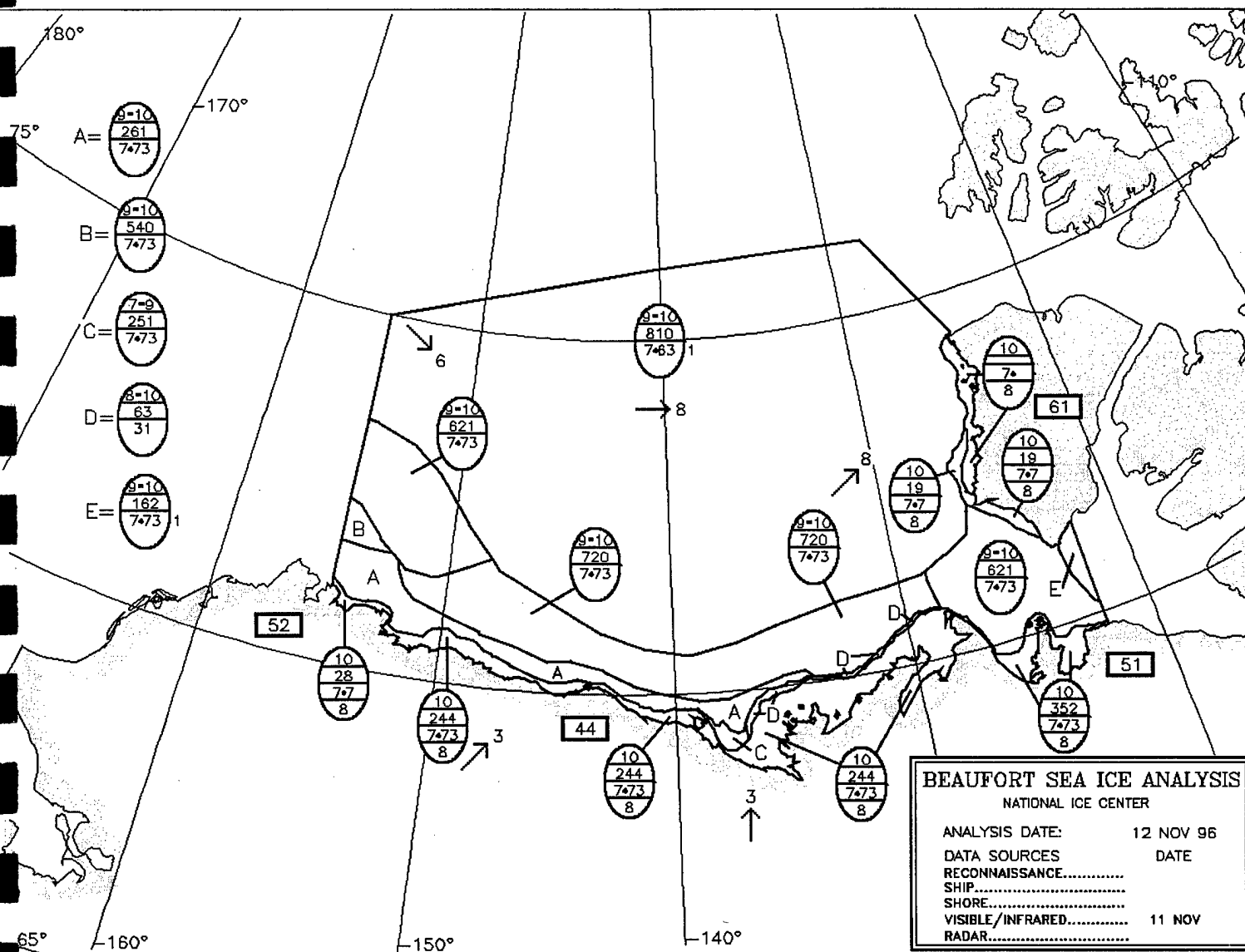


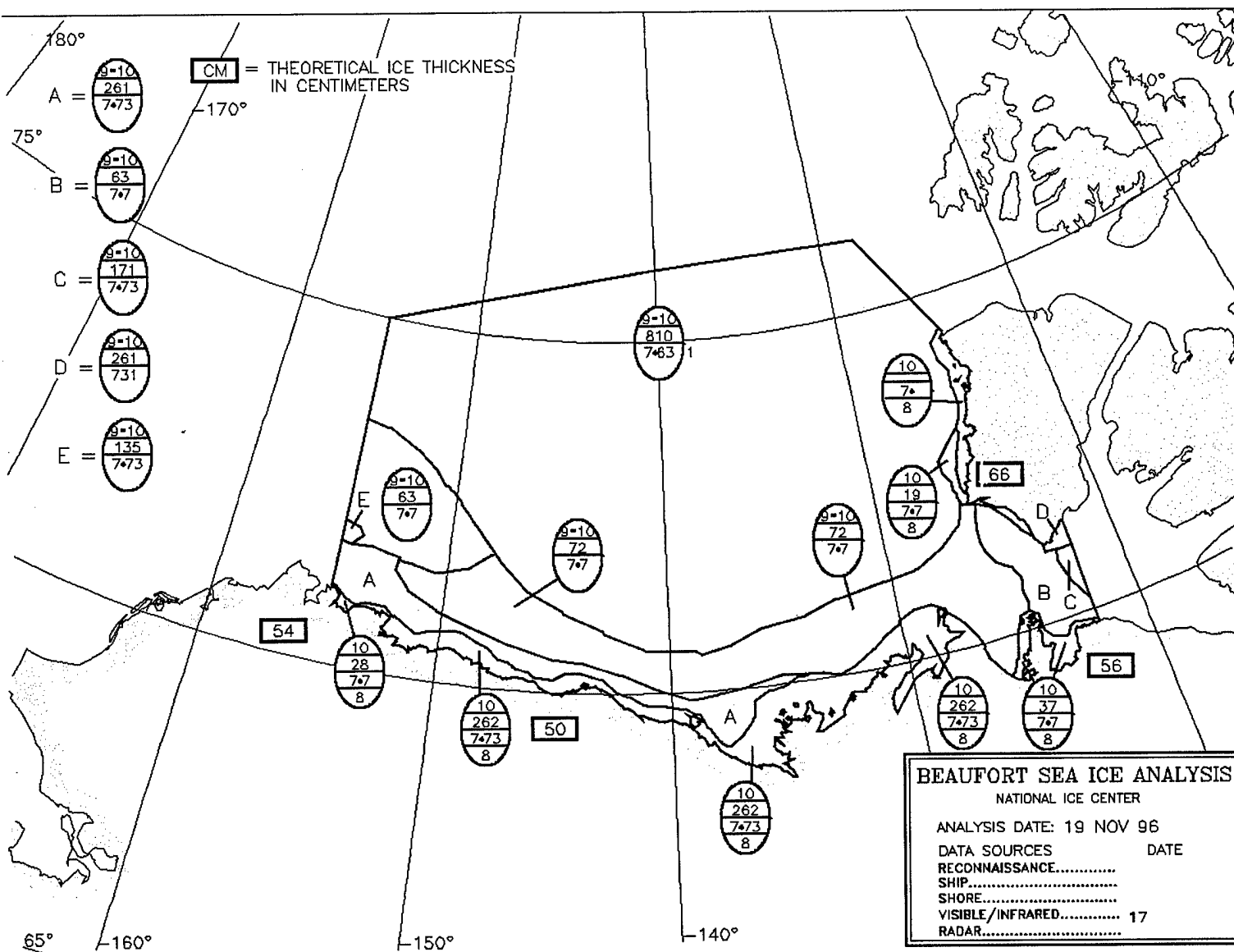


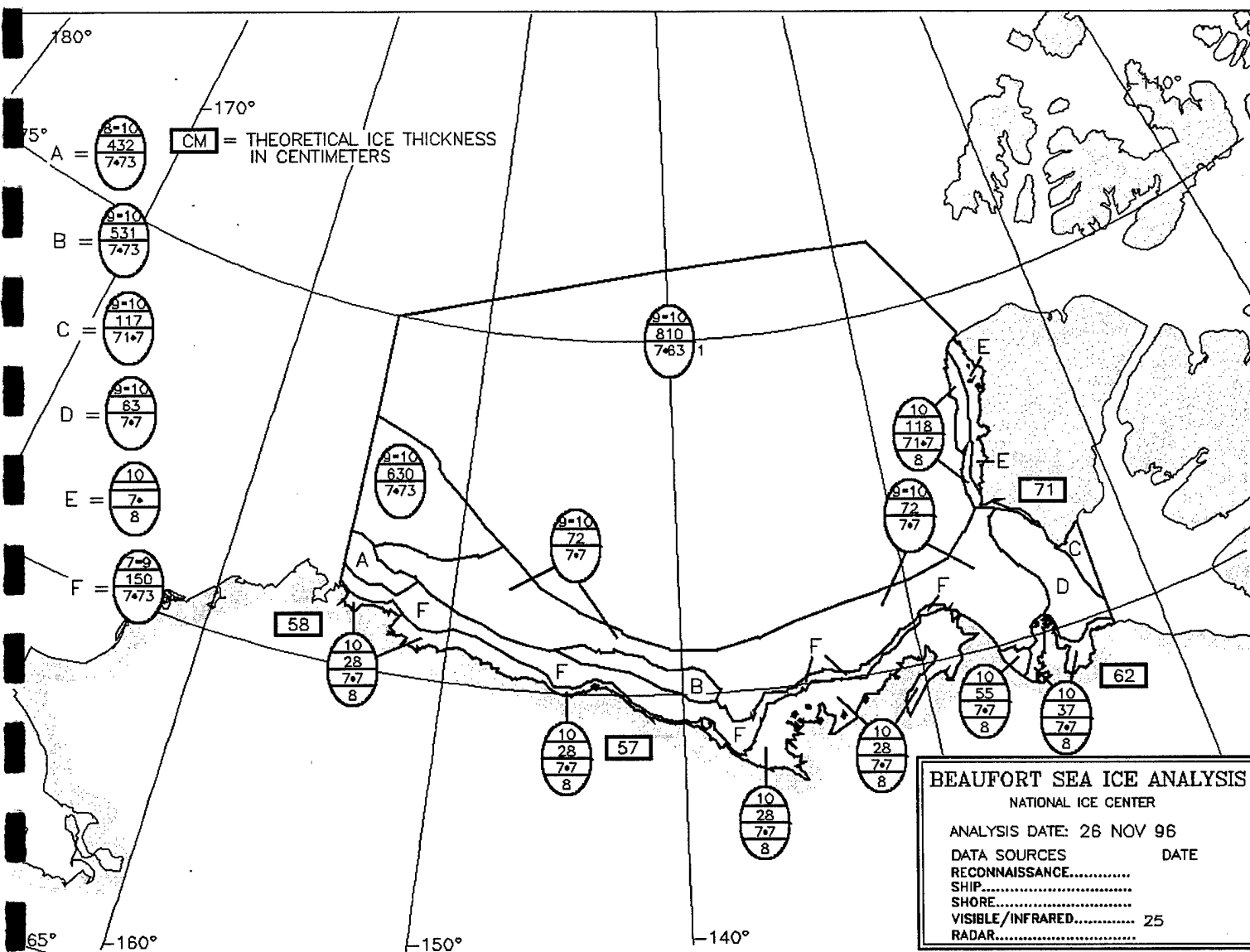


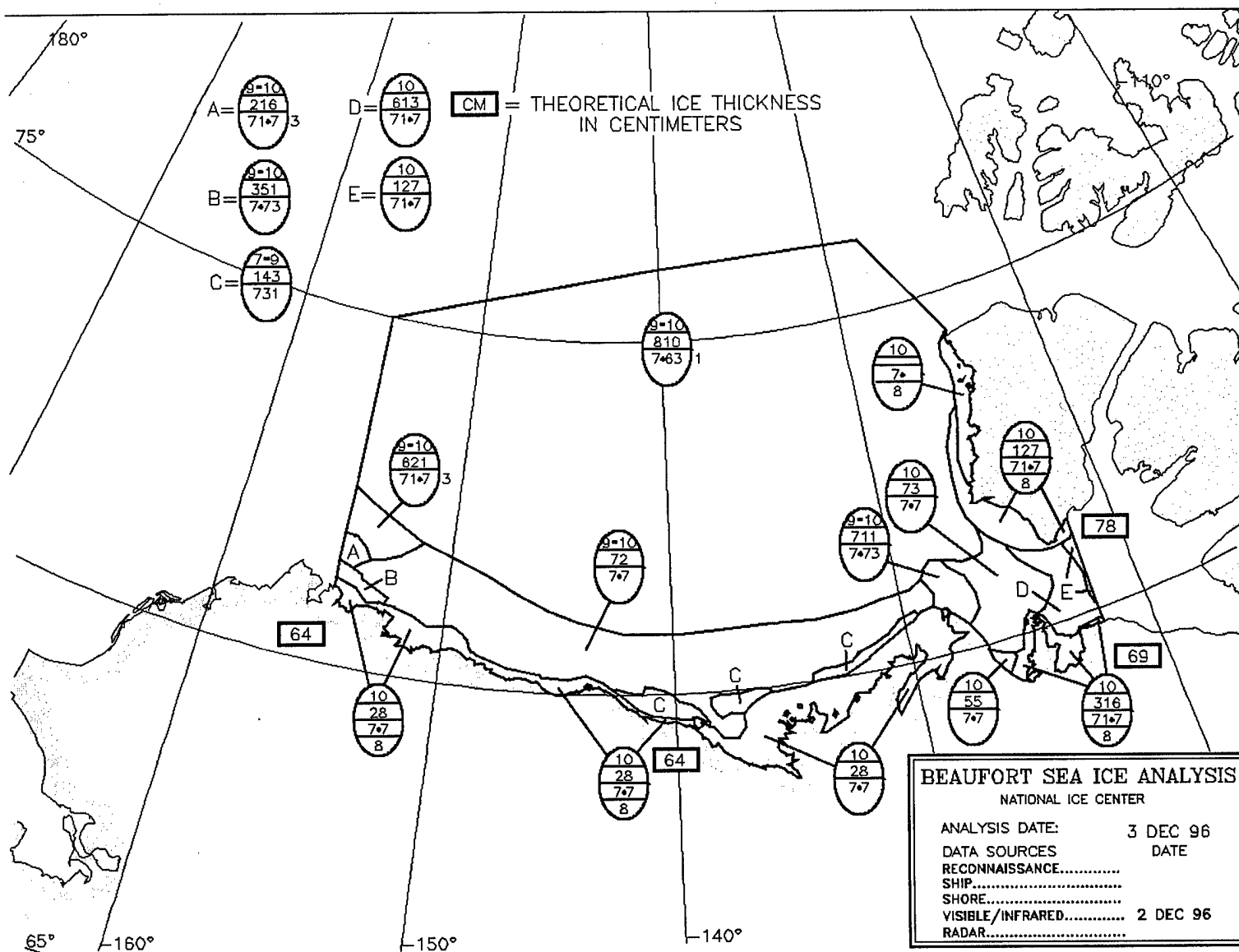


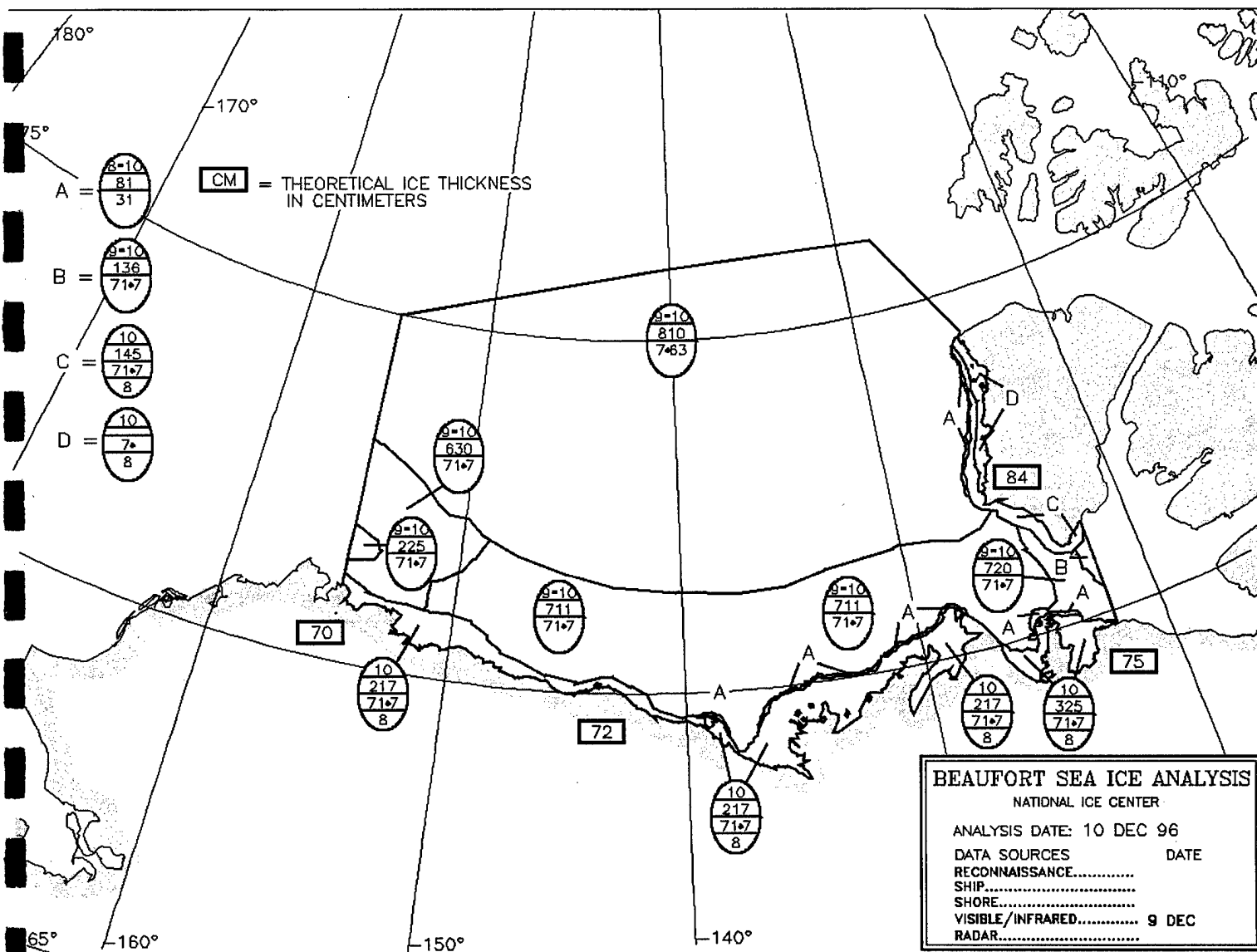


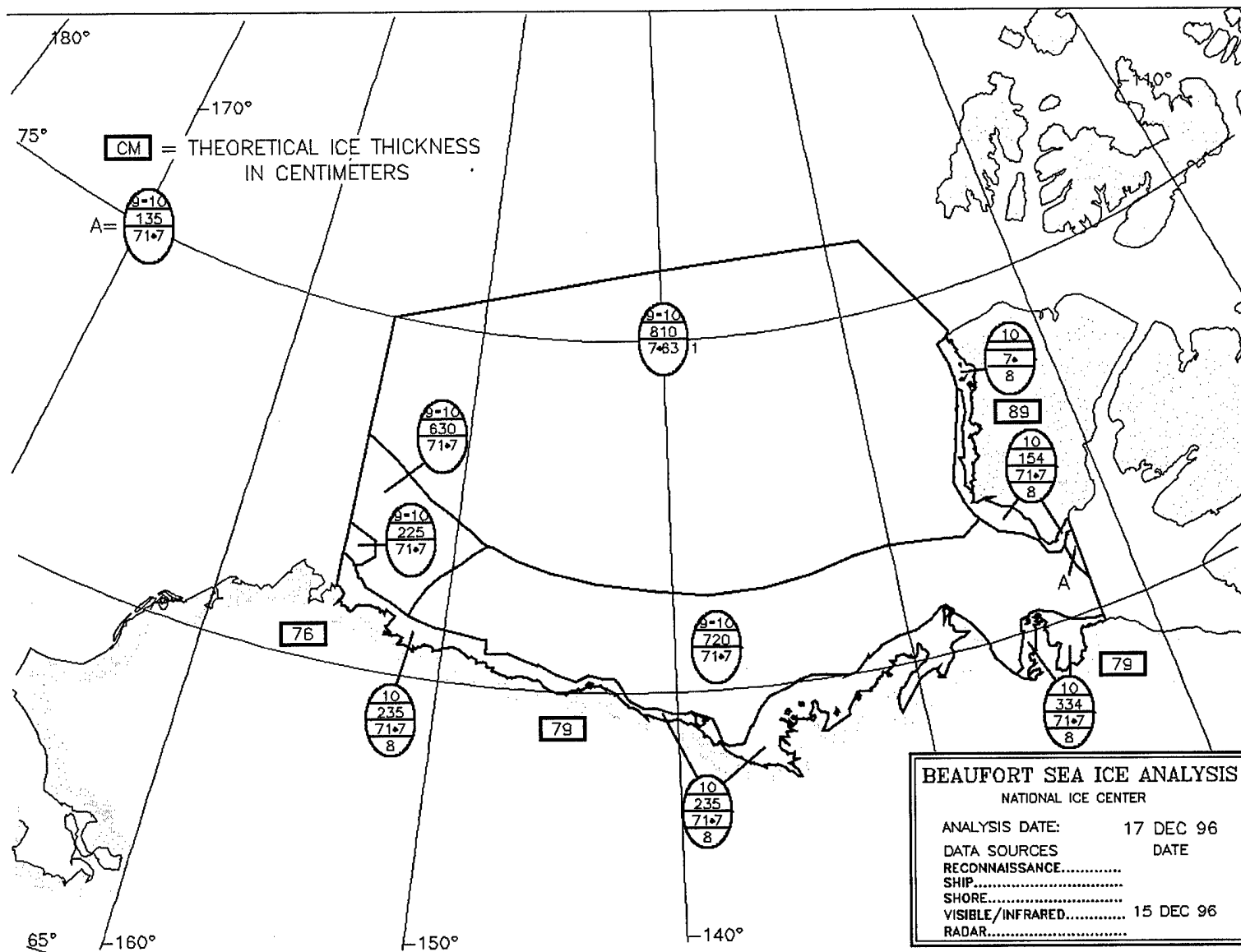


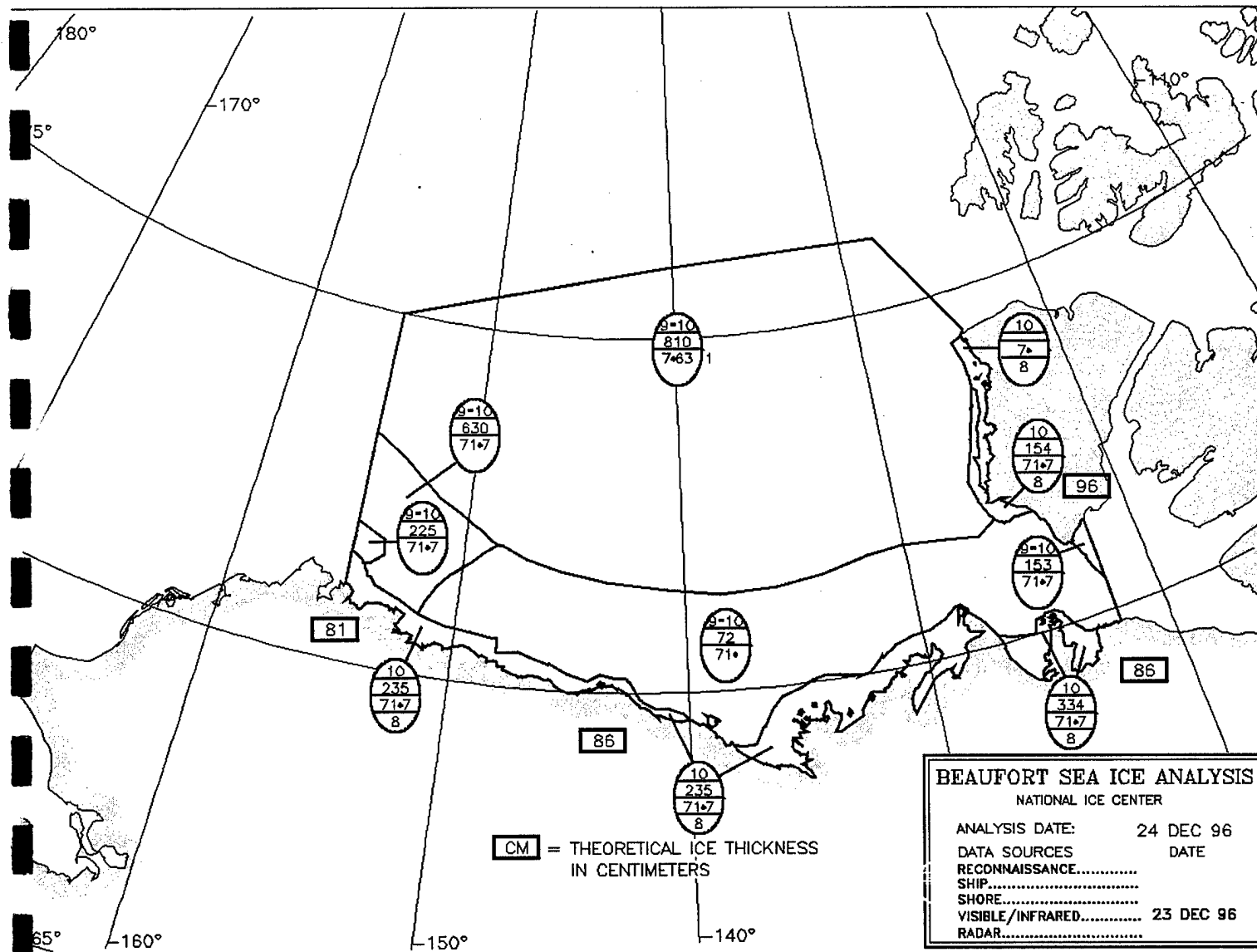




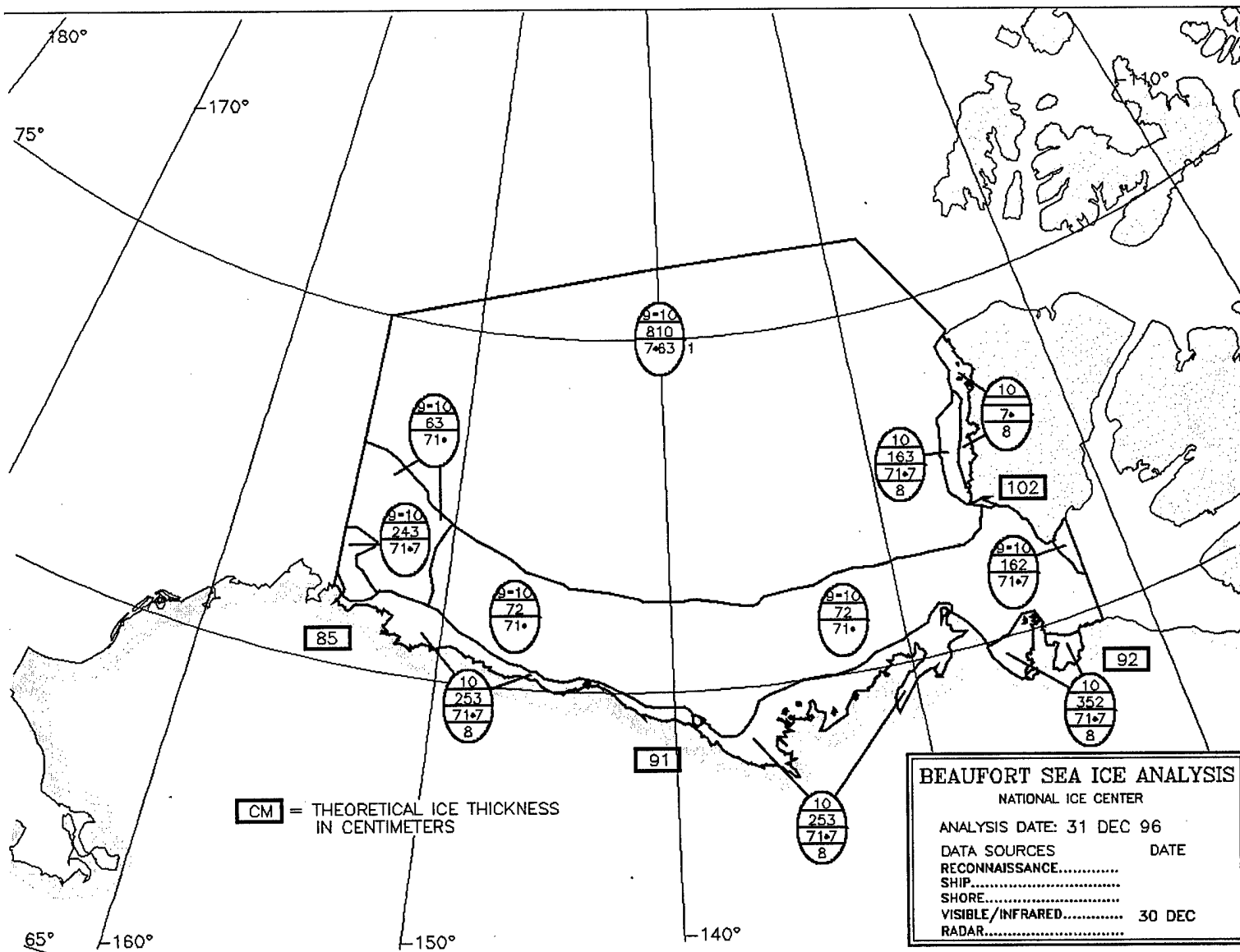








BEAUFORT SEA ICE ANALYSIS	
NATIONAL ICE CENTER	
ANALYSIS DATE:	24 DEC 96
DATA SOURCES	DATE
RECONNAISSANCE.....	
SHIP.....	
SHORE.....	
VISIBLE/INFRARED.....	23 DEC 96
RADAR.....	



CANARCH WEST ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 27 AUG 96

DATA SOURCES DATE

RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 25-26 AUG 96

RADAR.....

SIF = SEA ICE FREE

A= $\frac{0-1}{7\bullet}$

F= $\frac{10}{73}$
 $\frac{74\bullet}{8}$

J= $\frac{7-9}{71}$
 $\frac{74\bullet}{74\bullet}$

M= $\frac{7-9}{62}$
 $\frac{74\bullet}{74\bullet}$

O= $\frac{9-10}{18}$
 $\frac{74\bullet}{74\bullet}$

B= $\frac{1-3}{7\bullet}$

G= $\frac{10}{82}$
 $\frac{74\bullet}{8}$

K= $\frac{6-8}{25}$
 $\frac{74\bullet}{74\bullet}$

N= $\frac{9-10}{27}$
 $\frac{74\bullet}{74\bullet}$

C= $\frac{2-4}{7\bullet}$

H= $\frac{9-10}{72}$
 $\frac{74\bullet}{74\bullet}$

D= $\frac{3-5}{7\bullet}$

$\frac{9-10}{45}$
 $\frac{74\bullet}{74\bullet}$

$\frac{9-10}{810}$
 $\frac{74\bullet}{74\bullet}$

E= $\frac{6-8}{7\bullet}$

$\frac{9-10}{81}$
 $\frac{74\bullet}{74\bullet}$

$\frac{9-10}{72}$
 $\frac{74\bullet}{74\bullet}$

$\frac{5-7}{33}$
 $\frac{74\bullet}{74\bullet}$

$\frac{3-5}{13}$
 $\frac{74\bullet}{74\bullet}$

$\frac{6-8}{25}$
 $\frac{74\bullet}{74\bullet}$

$\frac{8-10}{27}$
 $\frac{74\bullet}{74\bullet}$

$\frac{0-1}{4\bullet}$

$\frac{2-4}{7\bullet}$
 $\frac{74\bullet}{74\bullet}$

$\frac{6-8}{25}$
 $\frac{74\bullet}{74\bullet}$

-120

-130

-110

-100

-80

85

70

SIF

SIF

SIF

CANARCH WEST ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 03 SEP 96

DATA SOURCES DATE

RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 03 SEP 96

RADAR.....

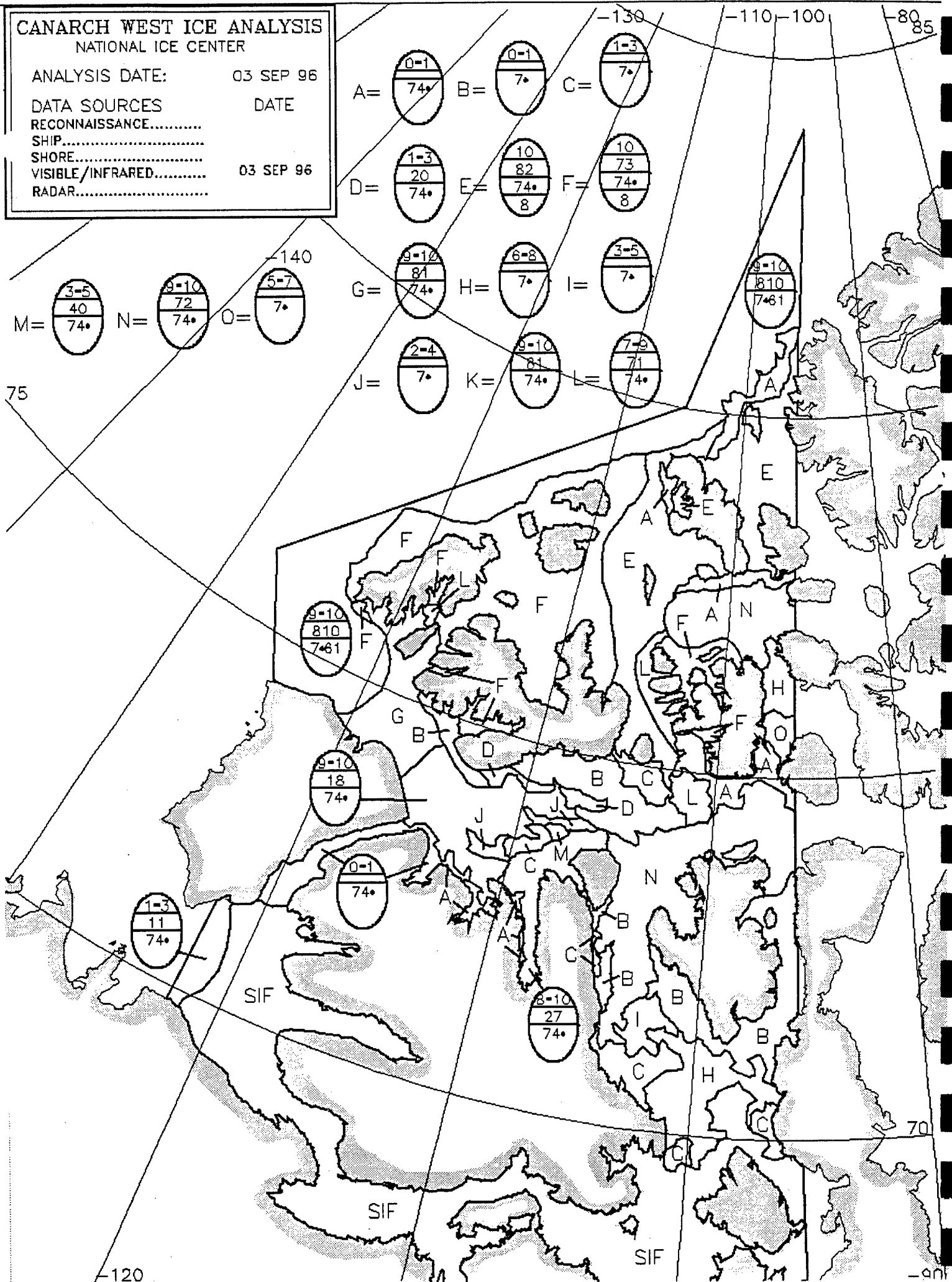
A = $\frac{0-1}{74\bullet}$ B = $\frac{0-1}{7\bullet}$ C = $\frac{1-3}{7\bullet}$

D = $\frac{1-3}{20}$ E = $\frac{10}{82}$ F = $\frac{10}{73}$

G = $\frac{9-10}{81}$ H = $\frac{6-8}{7\bullet}$ I = $\frac{3-5}{7\bullet}$

J = $\frac{2-4}{7\bullet}$ K = $\frac{9-10}{81}$ L = $\frac{7-9}{71}$

M = $\frac{3-5}{40}$ N = $\frac{9-10}{72}$ O = $\frac{5-7}{7\bullet}$



CANARCH WEST ICE ANALYSIS
NATIONAL ICE CENTER

ANALYSIS DATE: 10 SEP 96

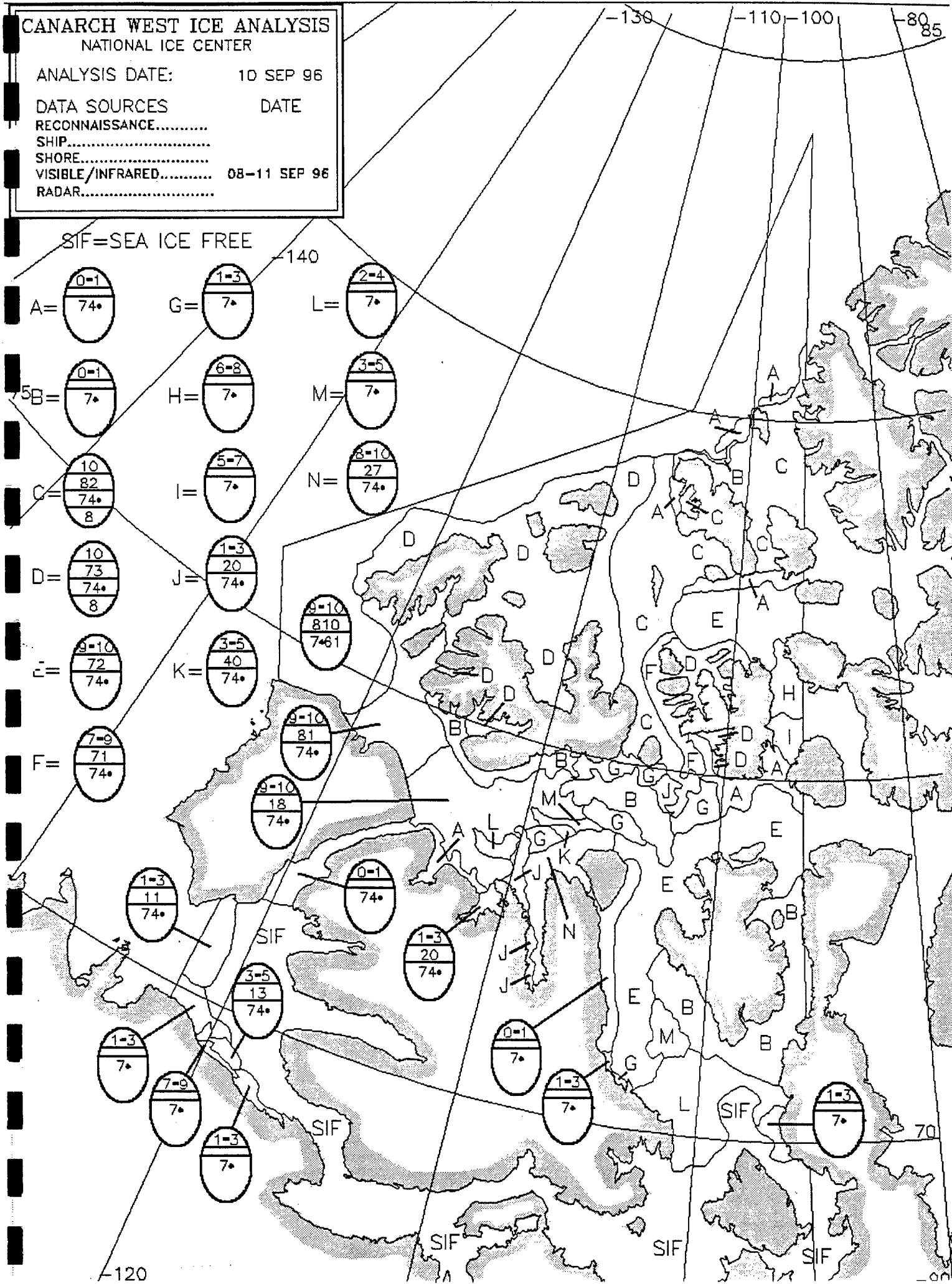
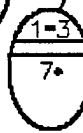
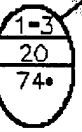
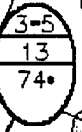
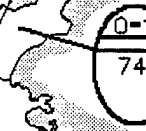
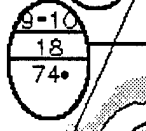
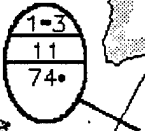
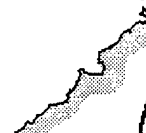
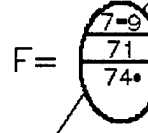
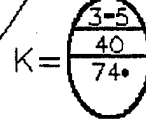
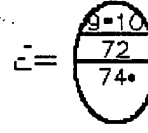
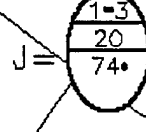
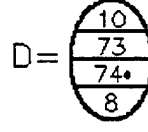
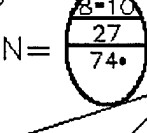
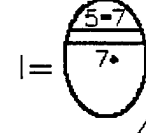
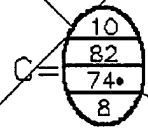
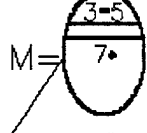
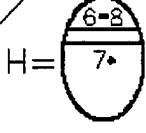
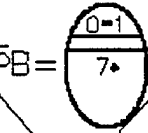
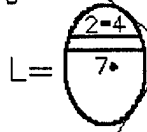
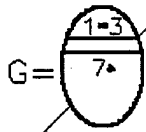
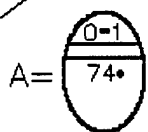
DATA SOURCES	DATE
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RECONNAISSANCE.....

SHIP.....

SHORE.....
VISIBLE/INFRARED..... 08-11 SEP 96

RADAR.....

~~SIF=SEA ICE FREE~~

NATIONAL ICE CENTER

DATA SOURCES	DATE
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RECONNAISSANCE.....

SHIP.....

SHORE.....
VISIBLE/INFRARED..... 17 SEP 96

RADAR.....

$$P =$$
$$Q =$$

~~SIF=SEA ICE FREE~~

$$A =$$
$$H =$$
$$M =$$

B =

17

$$N =$$

C/

$$J =$$
 $\emptyset =$

D=

$$K =$$

F=

L=

 $F =$ $G =$ 

A

1



CANARCH WEST ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 24 SEP 96

DATA SOURCES DATE

ECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 24 SEP 96

RADAR.....

SIF=SEA ICE FREE

A= $\frac{0-1}{74\bullet}$

G= $\frac{1-3}{7\bullet}$

L= $\frac{5-7}{7\bullet}$

Q= $\frac{7-9}{71 \over 74\bullet}$

P= $\frac{9-10}{18 \over 74\bullet}$

B= $\frac{10}{82 \over 74\bullet}$

H= $\frac{2-4}{7\bullet}$

M= $\frac{3-5}{7\bullet}$

Q= $\frac{9-10}{81 \over 74\bullet}$

R= $\frac{8-10}{72 \over 74\bullet}$

C= $\frac{9-10}{810 \over 74\bullet}$

I= $\frac{9-10}{72 \over 74\bullet}$

N= $\frac{0-1}{7\bullet}$

D= $\frac{9-10}{720 \over 74\bullet}$

J= $\frac{9-10}{7\bullet}$

E= $\frac{3-5}{40 \over 7\bullet}$

K= $\frac{7-9}{7\bullet}$

$\frac{9-10}{81 \over 74\bullet}$

F= $\frac{10}{73 \over 74\bullet}$

$\frac{0-1}{74\bullet}$

$\frac{0-1}{74\bullet}$

$\frac{0-1}{7\bullet}$

$\frac{1-3}{11 \over 74\bullet}$

$\frac{6-8}{16 \over 74\bullet}$

$\frac{9-10}{72 \over 74\bullet}$

$\frac{1-3}{11 \over 74\bullet}$

$\frac{0-1}{7\bullet}$

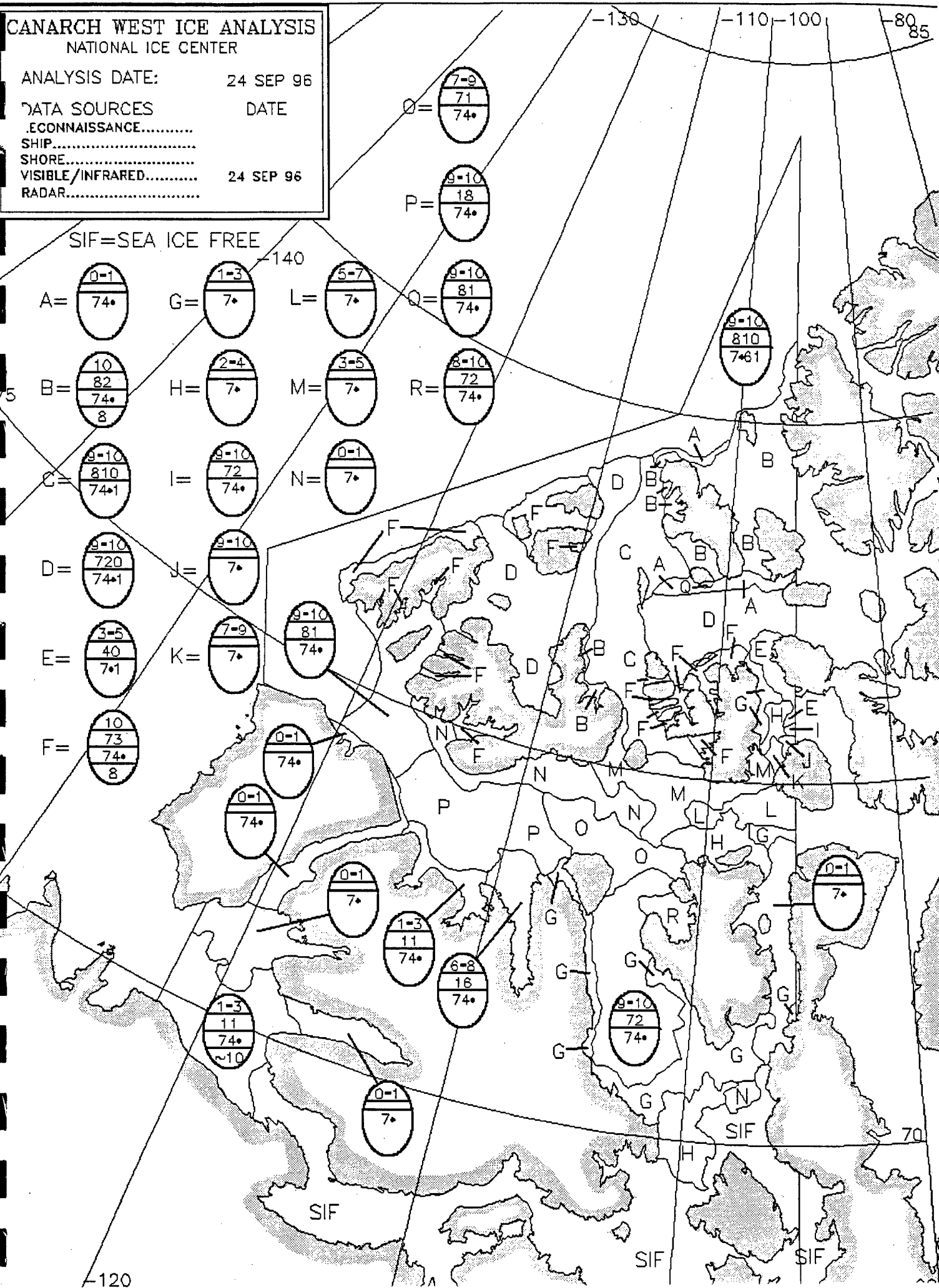
$\frac{0-1}{7\bullet}$

-120

-130 -110 -100 -80

85

70



CANARCH WEST ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 01 OCT 96

DATA SOURCES DATE

RECONNAISSANCE.....

SHIP.....

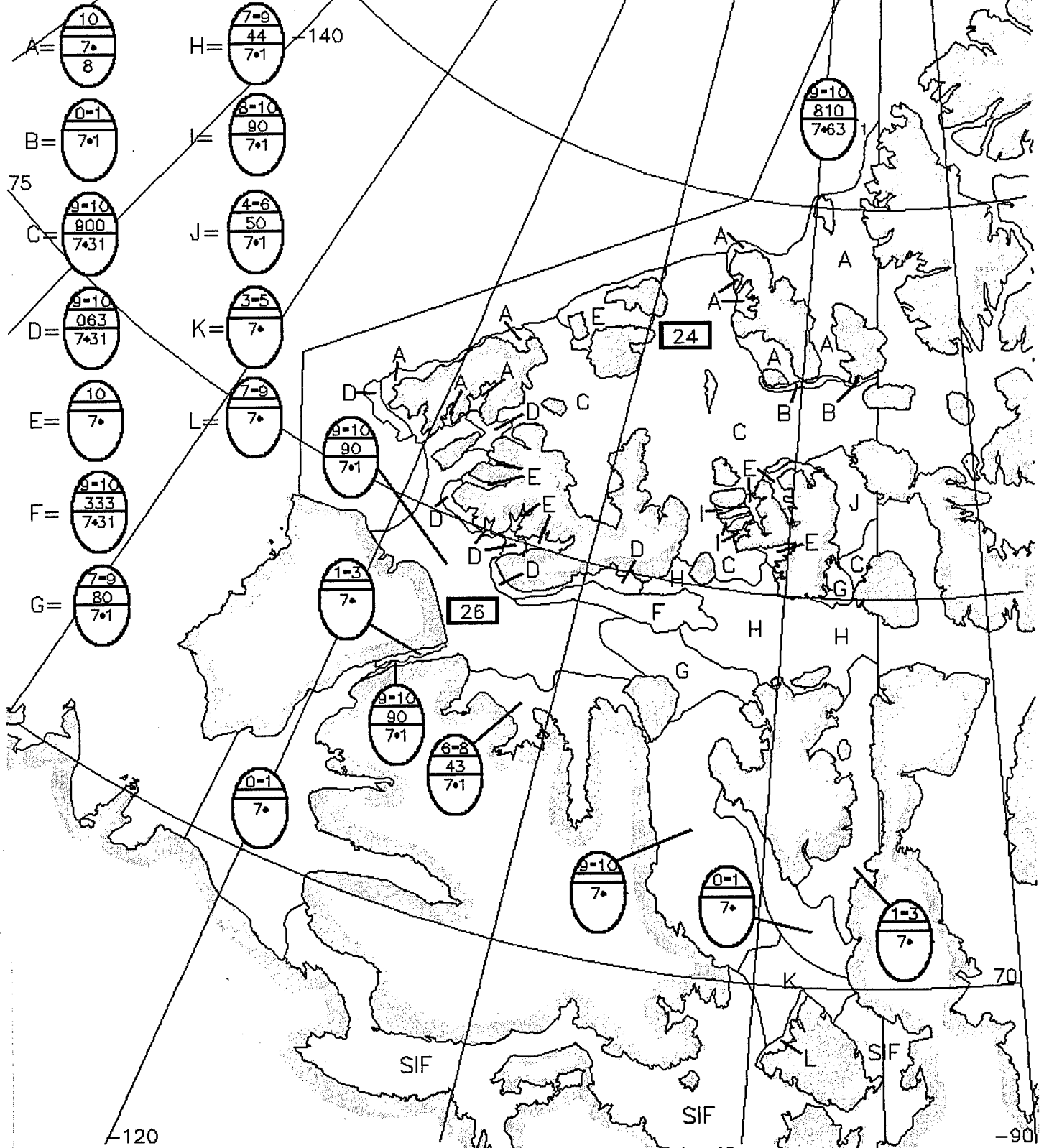
SHORE.....

VISIBLE/INFRARED..... 30 SEP 96

RADAR.....

CM = THICKNESS

SIF = SEA ICE FREE



CANARCH WEST ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 08 OCT 96

DATA SOURCES DATE

RECONNAISSANCE.....

SHIP.....

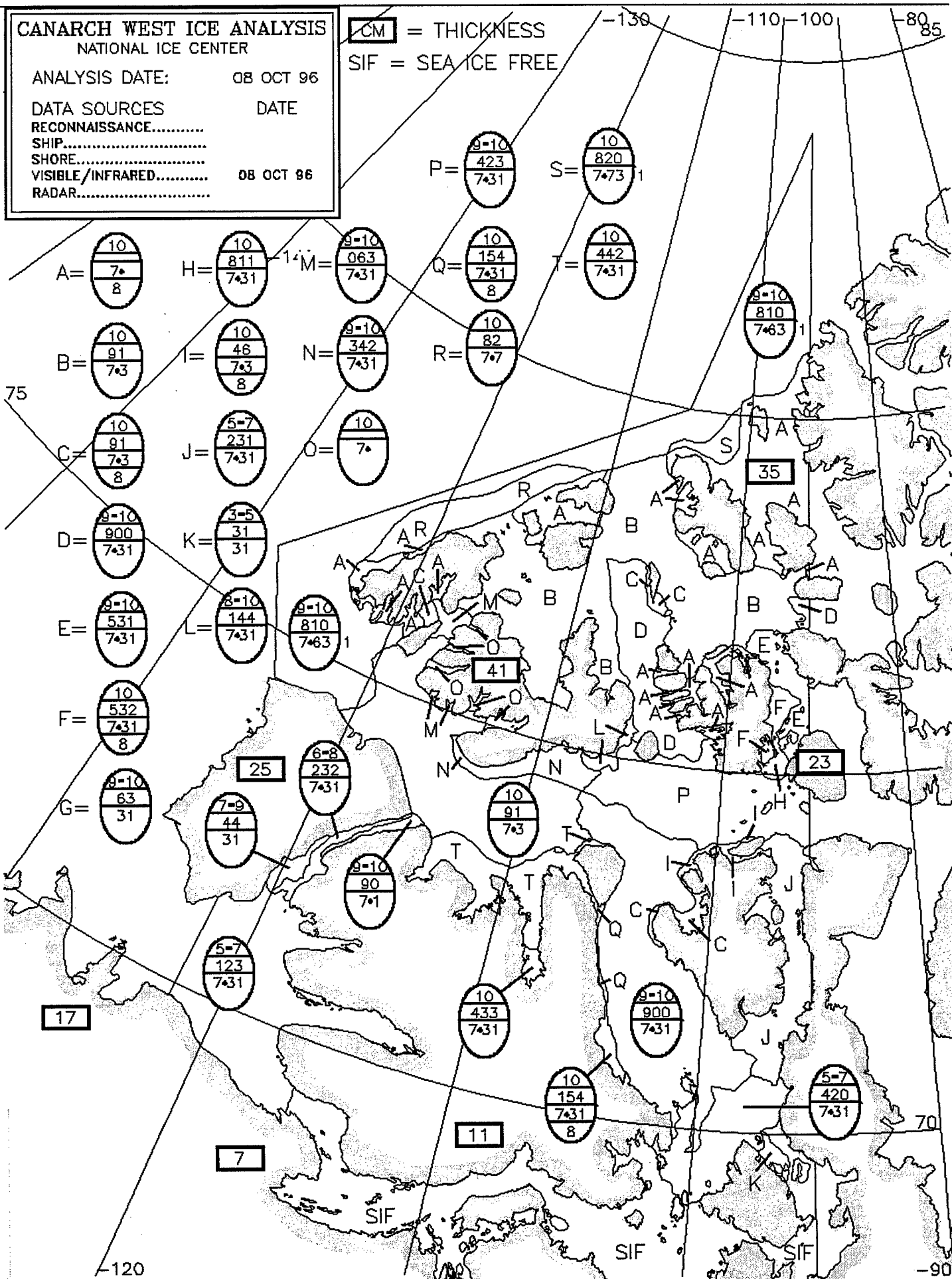
SHORE.....

VISIBLE/INFRARED..... 08 OCT 96

RADAR.....

CM = THICKNESS

SIF = SEA ICE FREE



CANARCH WEST ICE ANALYSIS
NATIONAL ICE CENTER

ANALYSIS DATE: 15 OCT 96

DATA SOURCES	DATE
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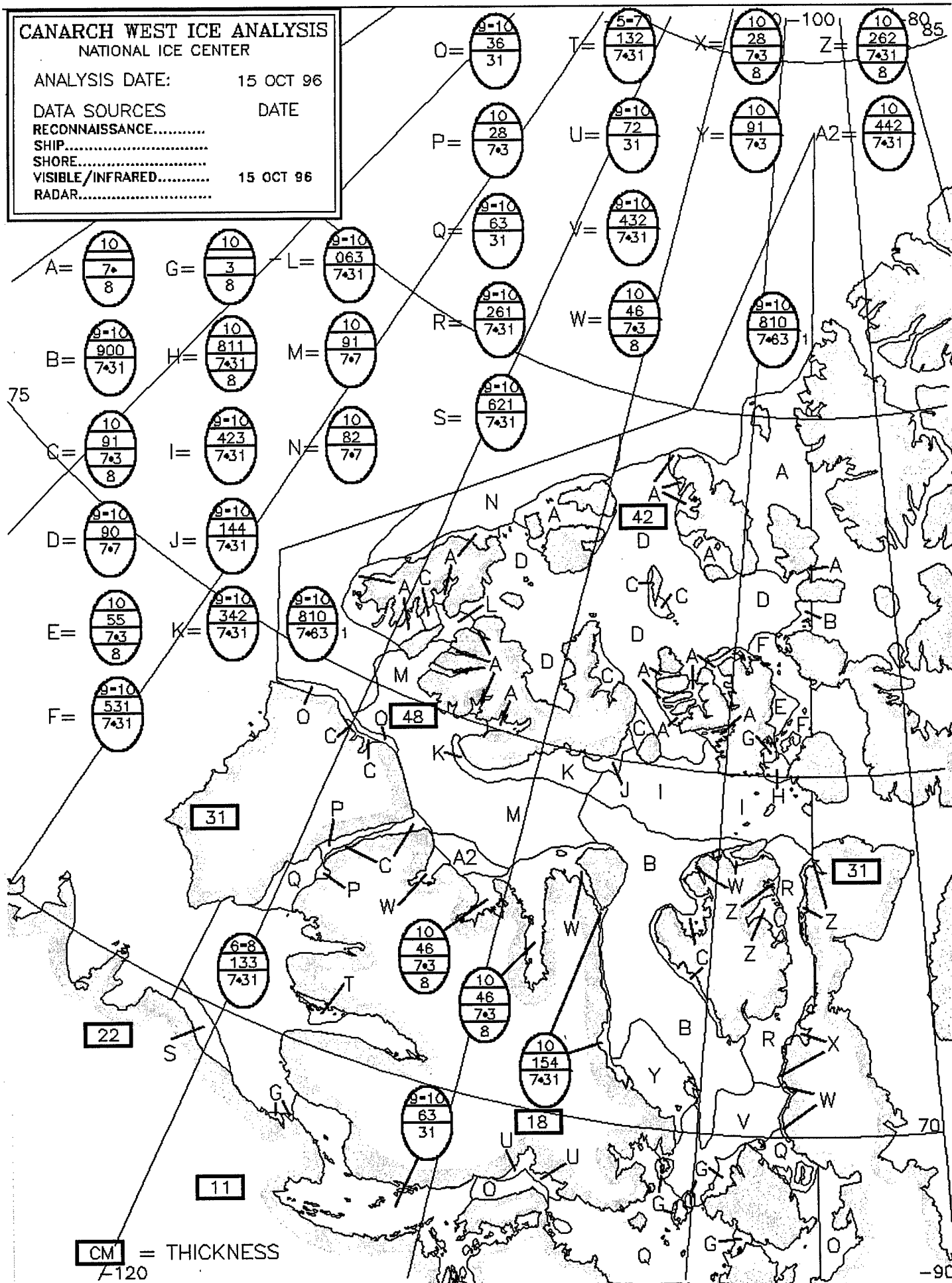
RECONNAISSANCE.....

SHIP.....

SHORE.....
MOBILE / INERTED

VISIBLE/INFRARED.....
RADAR.....

RADAR.....



CANARCH WEST ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 22 OCT 96

DATA SOURCES

DATE

RECONNAISSANCE.....

SHIP.....

SHORE.....

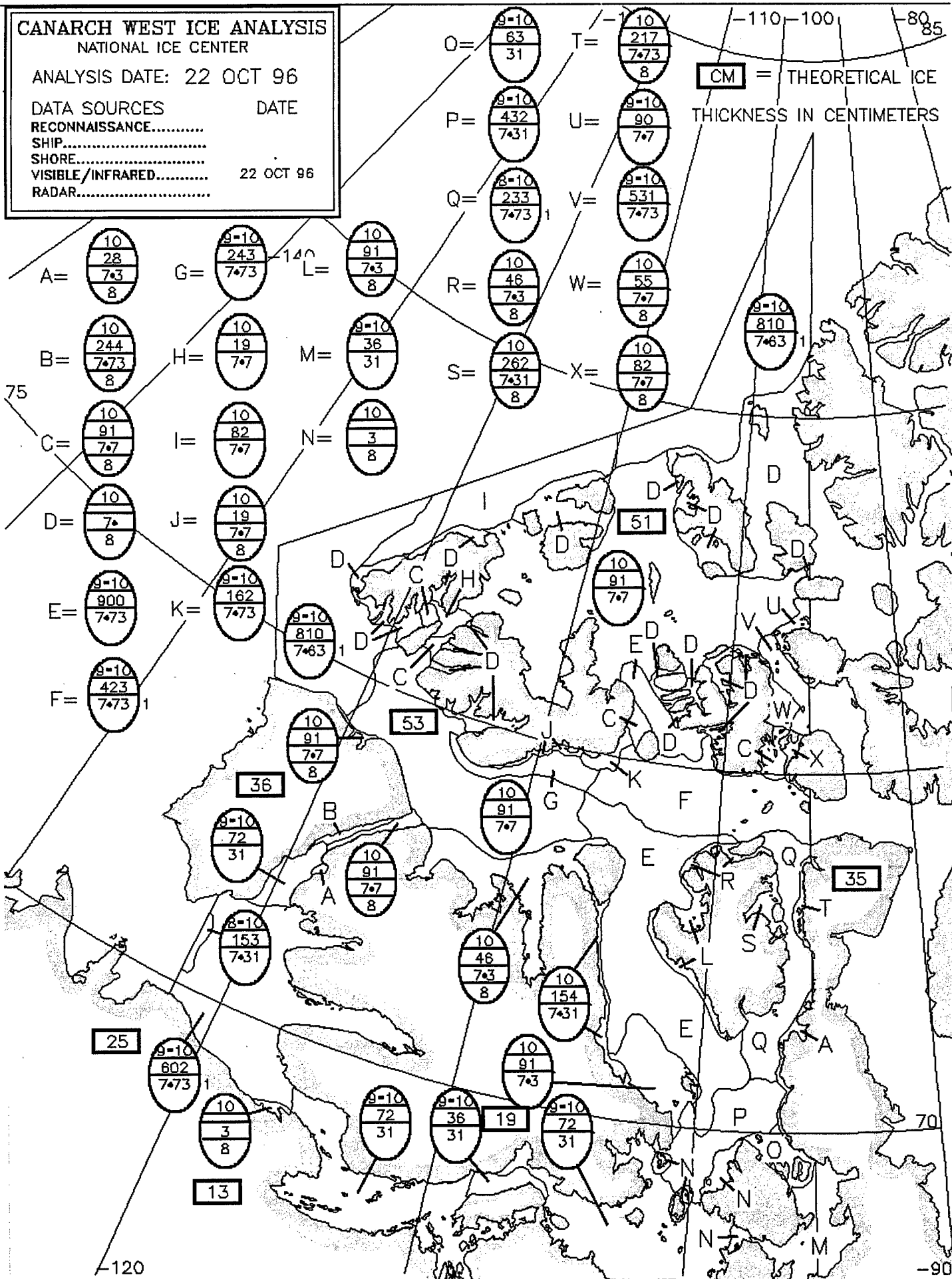
VISIBLE/INFRARED.....

22 OCT 96

RADAR.....

CM = THEORETICAL ICE
THICKNESS IN CENTIMETERS

75



CANARCH WEST ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 29 OCT 96

DATA SOURCES

DATE

RECONNAISSANCE.....

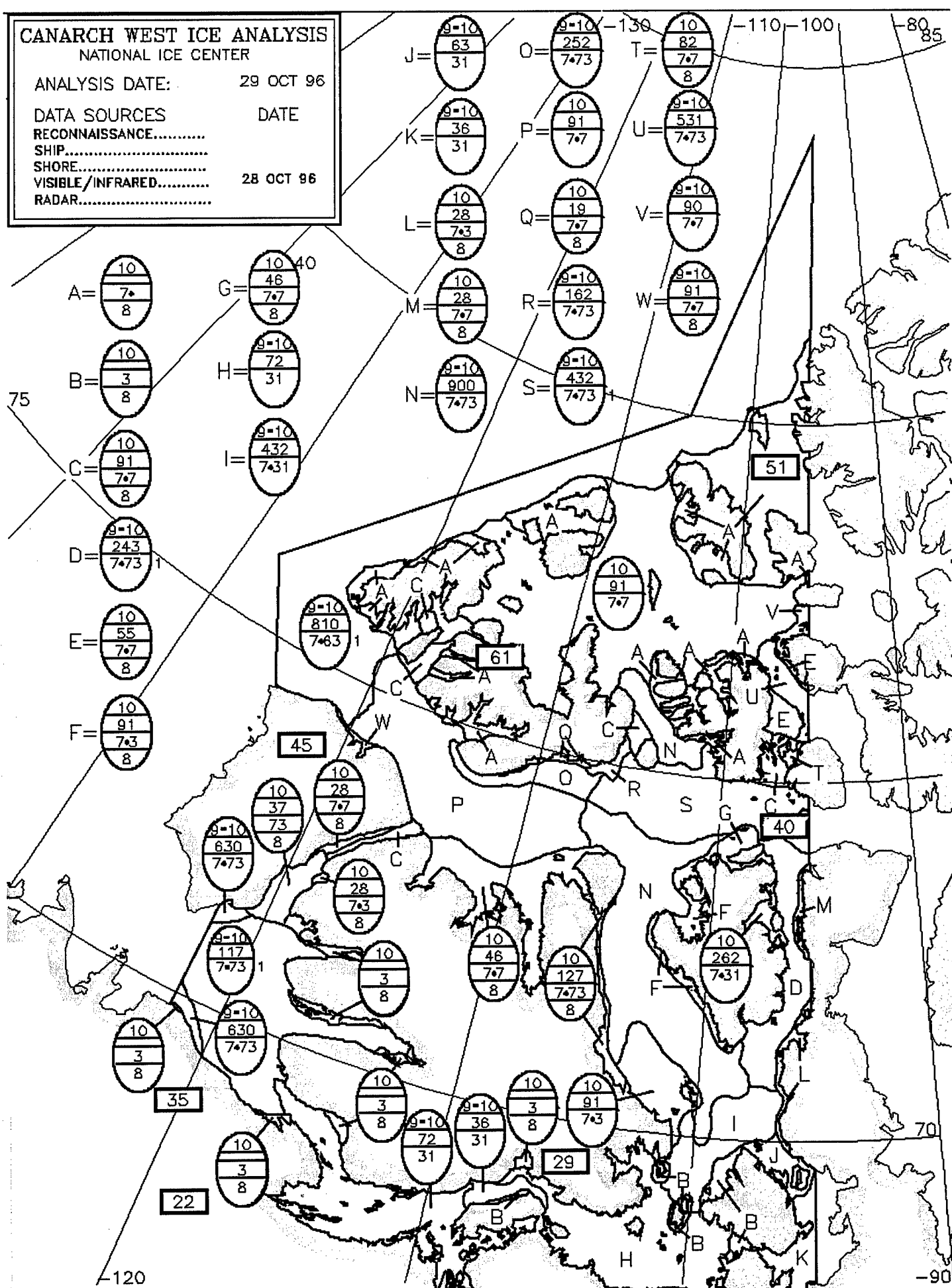
SHIP.....

SHORE.....

VISIBLE/INFRARED.....

RADAR.....

28 OCT 96



CANARCH WEST ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 05 NOV 96

DATA SOURCES RECONNAISSANCE..... DATE

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 04 NOV 96

RADAR.....

P = $\frac{9-10}{243}$ U = $\frac{10}{3}$ Y = $\frac{10}{19}$ CM = THEORETICAL
7-73 8 73 8 ICE THICKNESS
IN CENTIMETERS

Q = $\frac{9-10}{450}$ V = $\frac{9-10}{27}$ Z = $\frac{10}{631}$
7-73 73 731

R = $\frac{10}{37}$ W = $\frac{9-10}{261}$ A2 = $\frac{9-10}{630}$
73 8 731 7-73

S = $\frac{9-10}{63}$ X = $\frac{9-10}{36}$
31 31

T = $\frac{9-10}{162}$
731

A = $\frac{10}{7}$ H = $\frac{9-10}{441}$ M = $\frac{10}{46}$
8 7-73 8

B = $\frac{10}{91}$ I = $\frac{10}{118}$ N = $\frac{10}{91}$
7-7 71-7 8 7-73 8

C = $\frac{9-10}{90}$ J = $\frac{10}{91}$ O = $\frac{10}{28}$
7-7 71- 8 7-73 8

D = $\frac{10}{55}$ K = $\frac{9-10}{216}$
7-7 8 71-7

E = $\frac{9-10}{54}$ L = $\frac{10}{46}$
7-7 8 7-73 8

F = $\frac{10}{82}$
7-7 8

G = $\frac{10}{91}$
7-7 8

$\frac{9-10}{144}$
7-73 8

$\frac{10}{352}$
7-73 8

$\frac{10}{19}$
73 8

$\frac{10}{19}$
73 8

$\frac{10}{19}$
73 8

$\frac{10}{19}$
73 8

$\frac{10}{19}$
73 8

75

43

33

38

45

68

56

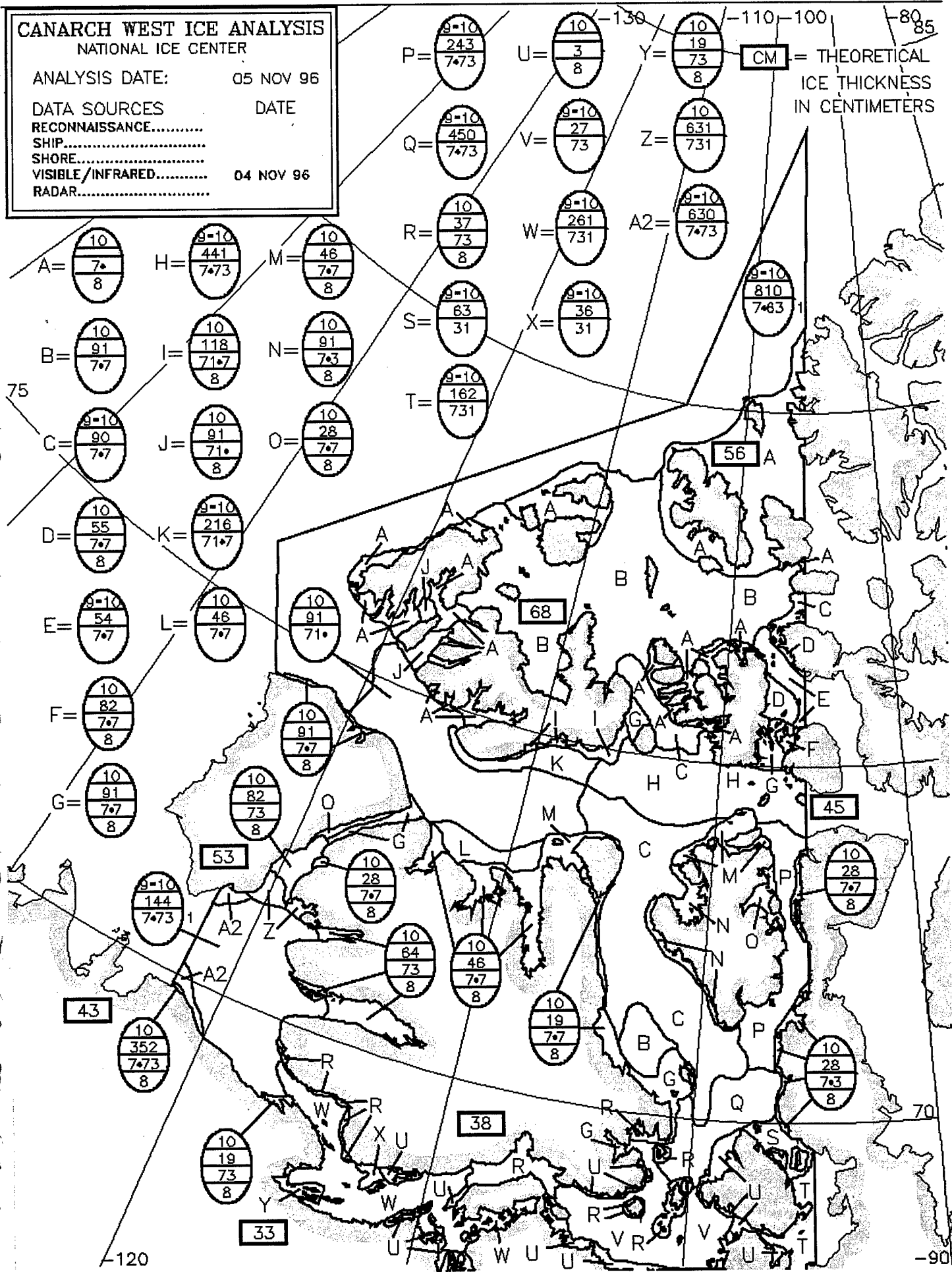
70

-90

-120

-80

ICE THICKNESS
IN CENTIMETERS



CANARCH WEST ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 12 NOV 96

DATA SOURCES DATE

RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 11 NOV 96

RADAR.....

P = $\frac{9-10}{261 \over 7 \cdot 73}$

U = $\frac{10}{28 \over 73 \over 8}$

CM = THEORETICAL ICE THICKNESS
IN CENTIMETERS

Q = $\frac{10}{3 \over 8}$

V = $\frac{9-10}{45 \over 73}$

R = $\frac{9-10}{450 \over 7 \cdot 73}$

W = $\frac{10}{415 \over 71 \cdot 7}$

Z = $\frac{9-10}{27 \over 73}$

S = $\frac{9-10}{261 \over 731}$

X = $\frac{10}{28 \over 73}$

T = $\frac{10}{37 \over 73 \over 8}$

Y = $\frac{9-10}{63 \over 73}$

A = $\frac{10}{7 \cdot 8}$

H = $\frac{9-10}{90 \over 7 \cdot 7}$

M = $\frac{10}{48 \over 7 \cdot 7}$

B = $\frac{10}{91 \over 71 \cdot 8}$

I = $\frac{9-10}{441 \over 7 \cdot 73}$

N = $\frac{10}{28 \over 7 \cdot 7 \over 8}$

C = $\frac{10}{55 \over 7 \cdot 7 \over 8}$

J = $\frac{10}{82 \over 7 \cdot 7 \over 8}$

O = $\frac{10}{91 \over 7 \cdot 3 \over 8}$

D = $\frac{9-10}{162 \over 7 \cdot 73}$

K = $\frac{10}{91 \over 7 \cdot 7}$

E = $\frac{10}{91 \over 7 \cdot 7 \over 8}$

L = $\frac{10}{46 \over 7 \cdot 7 \over 8}$

F = $\frac{9-10}{216 \over 71 \cdot 7}$

G = $\frac{10}{118 \over 71 \cdot 7 \over 8}$

$\frac{9-10}{621 \over 7 \cdot 73}$

$\frac{10}{7 \over 8}$

$\frac{10}{73 \over 73 \over 8}$

$\frac{10}{46 \over 7 \cdot 7 \over 8}$

$\frac{10}{19 \over 7 \cdot 7 \over 8}$

$\frac{10}{352 \over 7 \cdot 73 \over 8}$

$\frac{10}{64 \over 73 \over 8}$

$\frac{10}{47 \over 8}$

$\frac{10}{28 \over 7 \cdot 3 \over 8}$

$\frac{10}{64 \over 73 \over 8}$

75

43

62

75

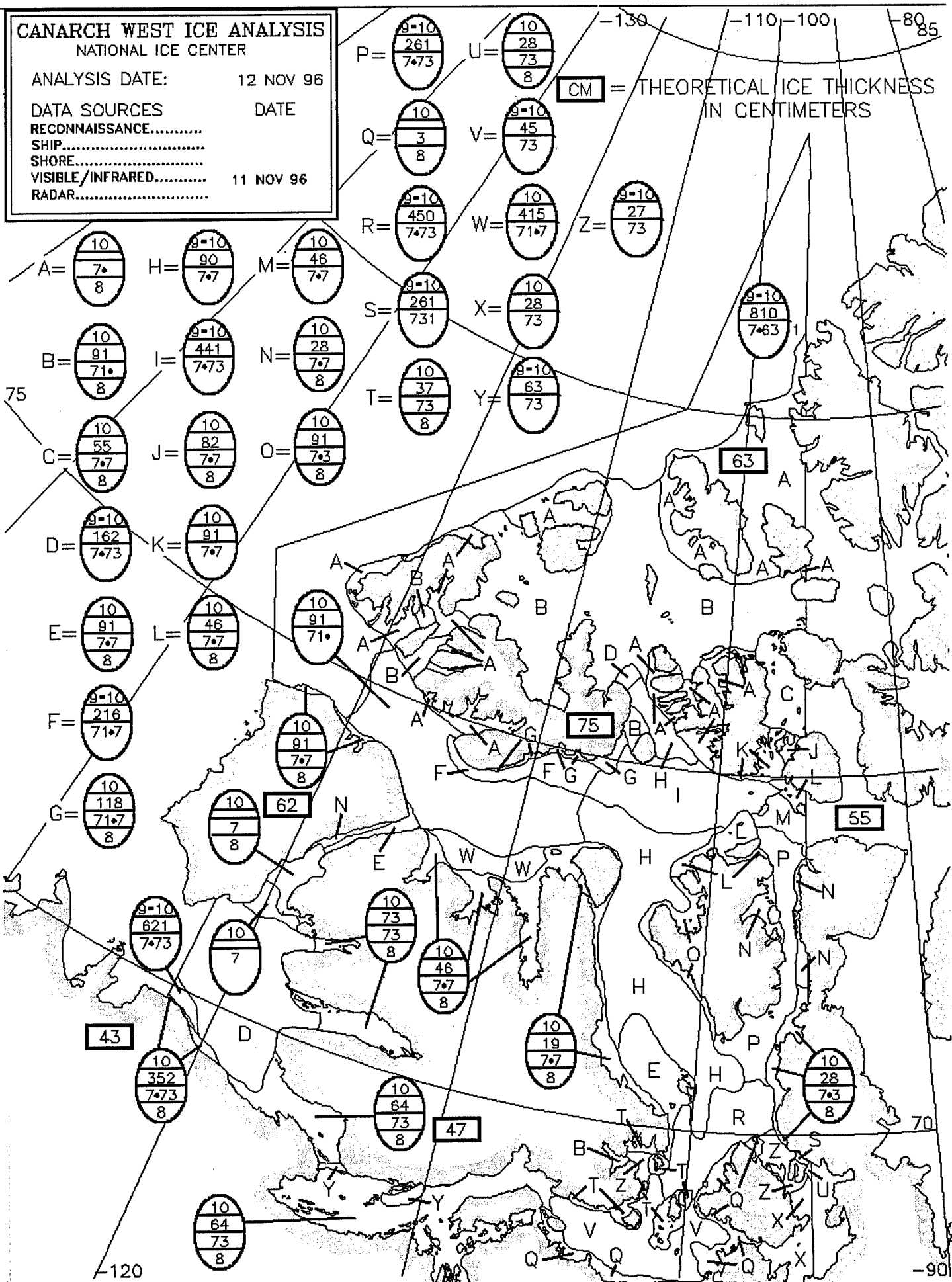
63

55

47

-120

-90



CANARCH WEST ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 19 NOV 96

DATA SOURCES RECONNAISSANCE..... DATE

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 18 NOV 96

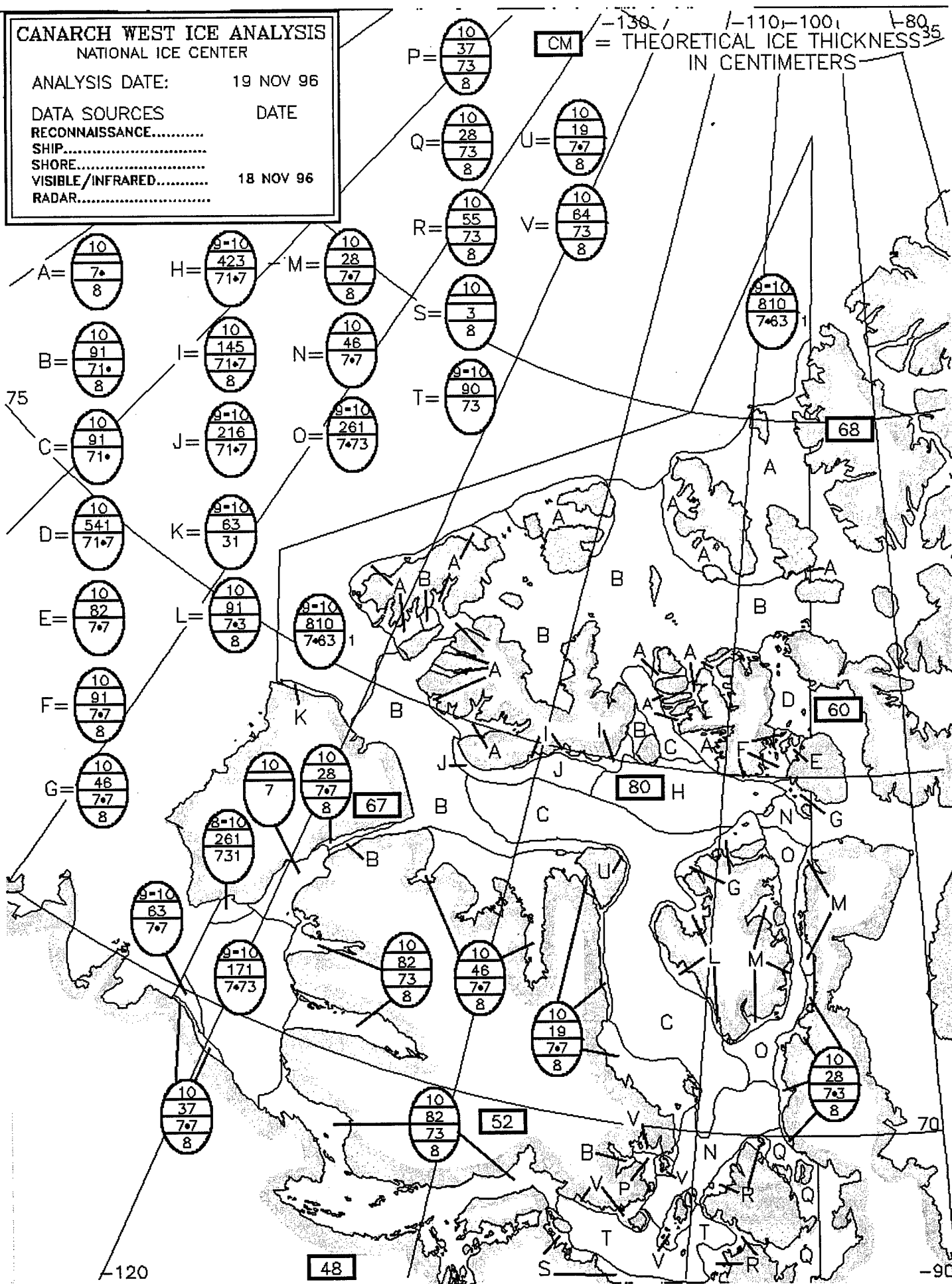
RADAR.....

P= $\frac{10}{37}$
Q= $\frac{10}{28}$
R= $\frac{10}{55}$
S= $\frac{10}{3}$
T= $\frac{9-10}{90}$
U= $\frac{10}{19}$
V= $\frac{10}{64}$

CM = THEORETICAL ICE THICKNESS³⁵
IN CENTIMETERS

A= $\frac{10}{7}$
B= $\frac{10}{91}$
C= $\frac{10}{91}$
D= $\frac{10}{541}$
E= $\frac{10}{82}$
F= $\frac{10}{91}$
G= $\frac{10}{46}$
H= $\frac{9-10}{423}$
I= $\frac{10}{145}$
J= $\frac{9-10}{216}$
K= $\frac{9-10}{63}$
L= $\frac{10}{91}$
M= $\frac{10}{28}$
N= $\frac{10}{46}$
O= $\frac{9-10}{261}$

75



CANARCH WEST ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 26 NOV 96

DATA SOURCES RECONNAISSANCE..... DATE

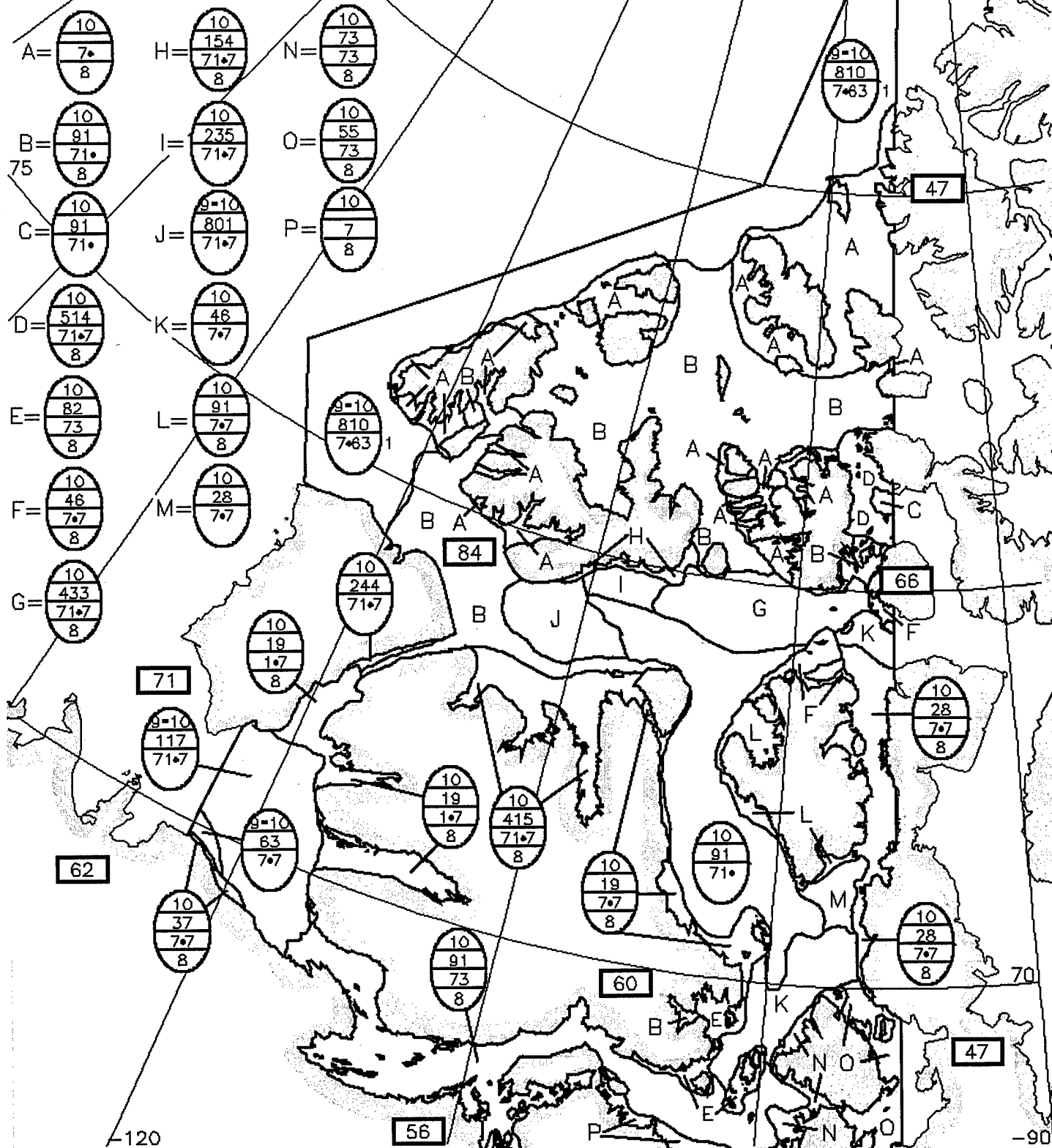
SHIP.....

SHORE.....

VISIBLE/INFRARED..... 25 NOV 96

RADAR.....

CM = THEORETICAL ICE THICKNESS
IN CENTIMETERS



CANARCH WEST ICE ANALYSIS
NATIONAL ICE CENTER

ANALYSIS DATE: 3 DEC 96

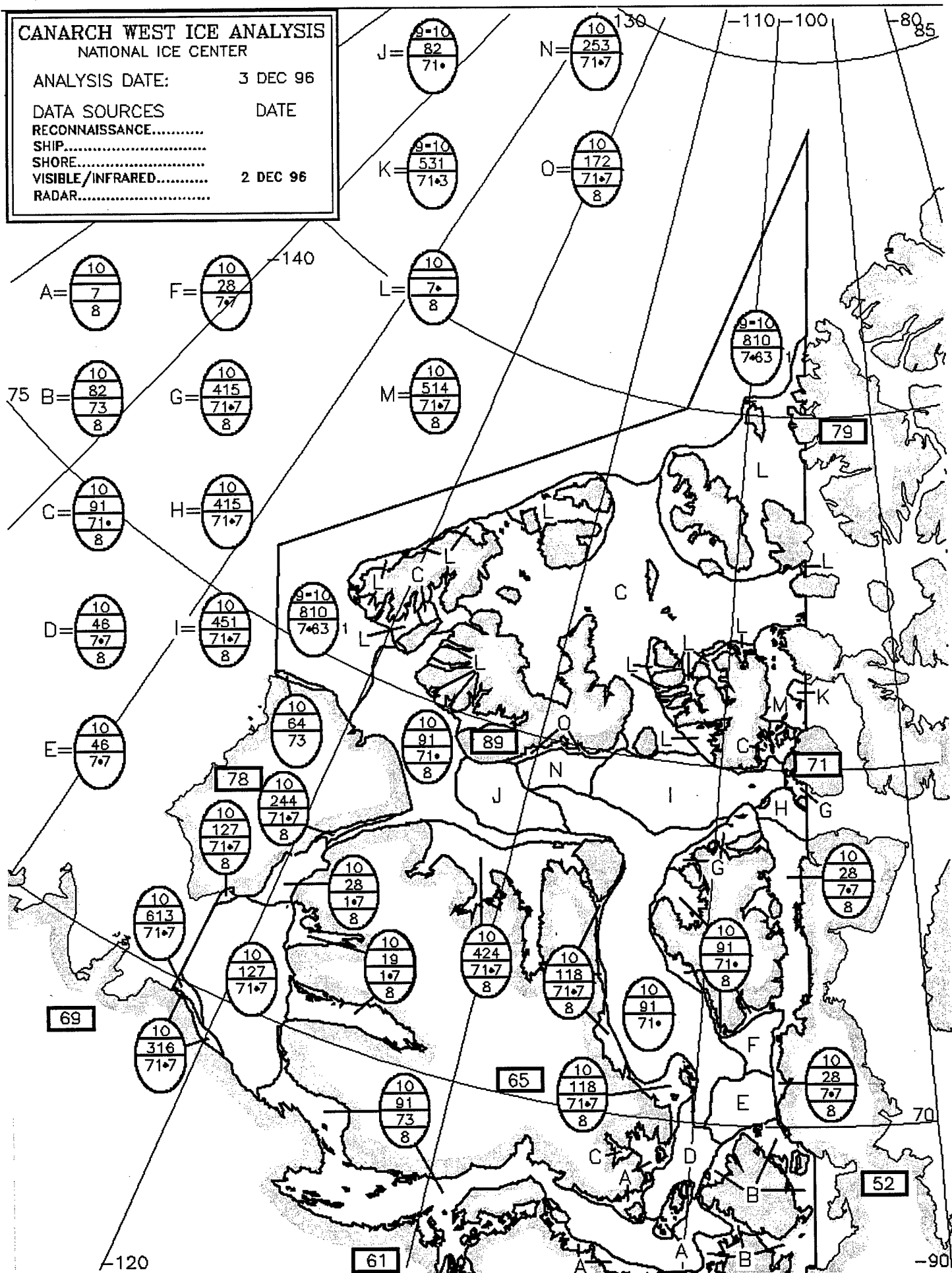
DATA SOURCES	DATE
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RECONNAISSANCE.....

SHIP#####

SHORE.....

VISIBLE/INFRARED.....



CANARCH WEST ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 10 DEC 96

DATA SOURCES DATE

RECONNAISSANCE.....

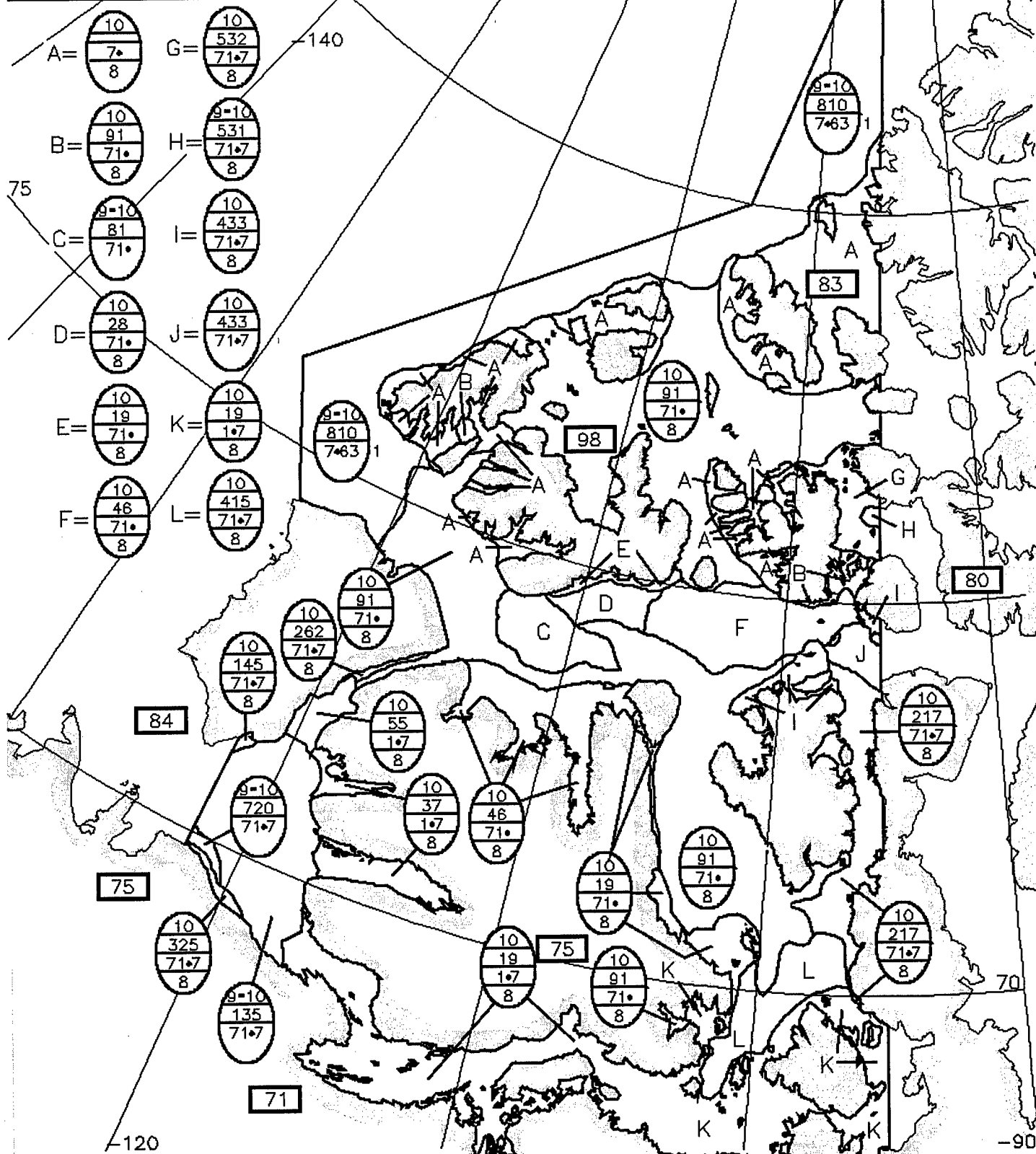
SHIP.....

SHORE.....

VISIBLE/INFRARED..... 9 DEC 96

RADAR.....

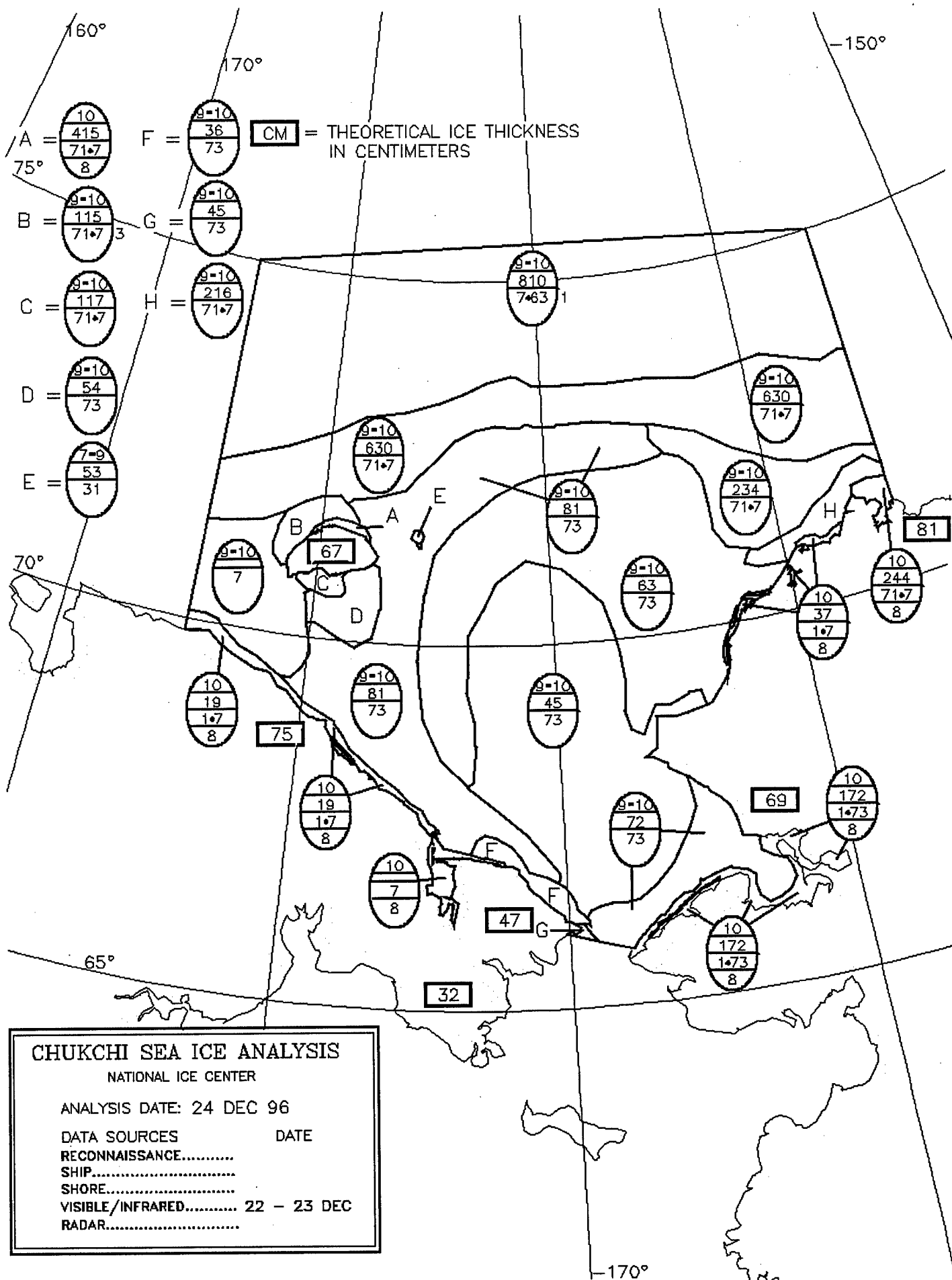
CM = THEORETICAL ICE THICKNESS
IN CENTIMETERS

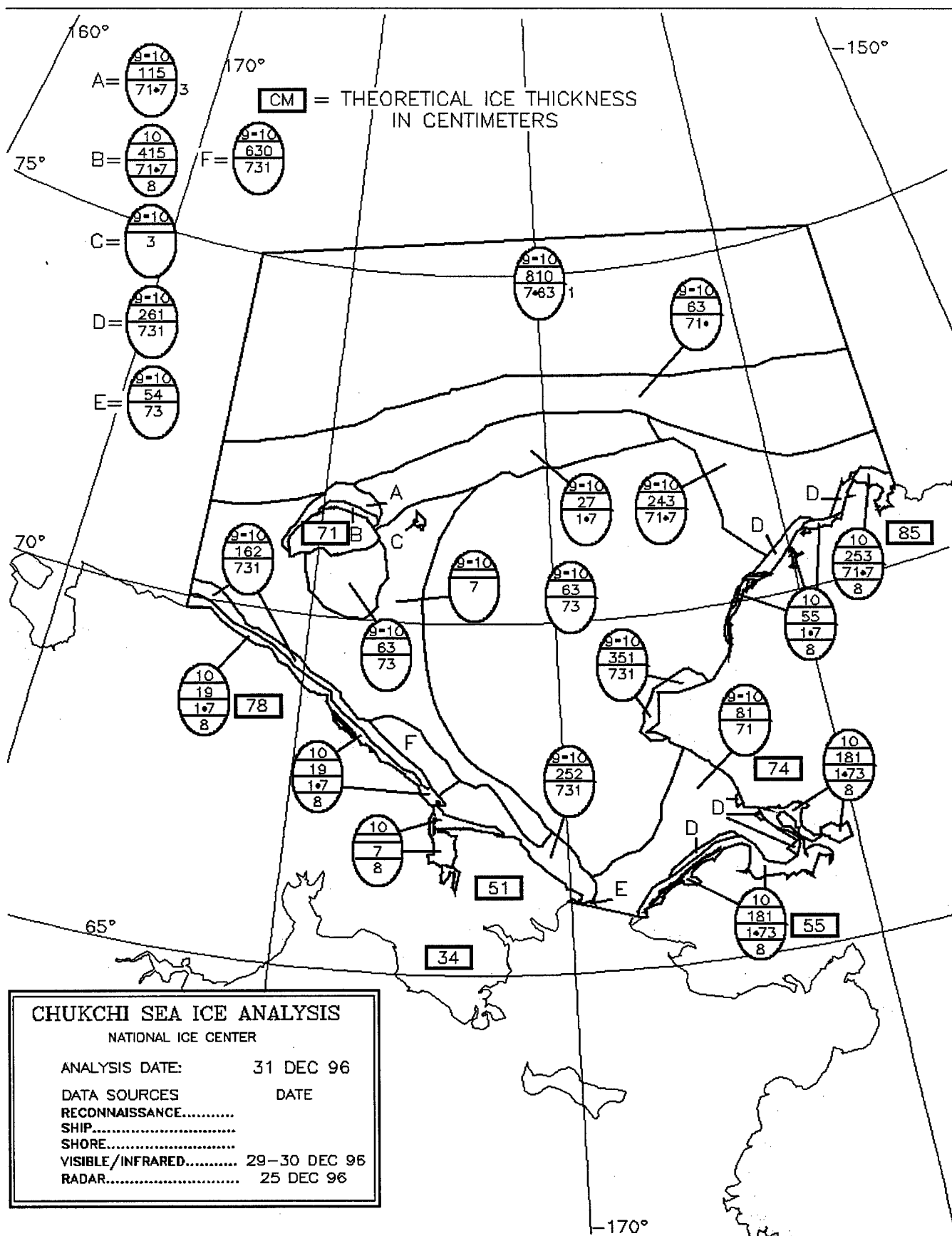


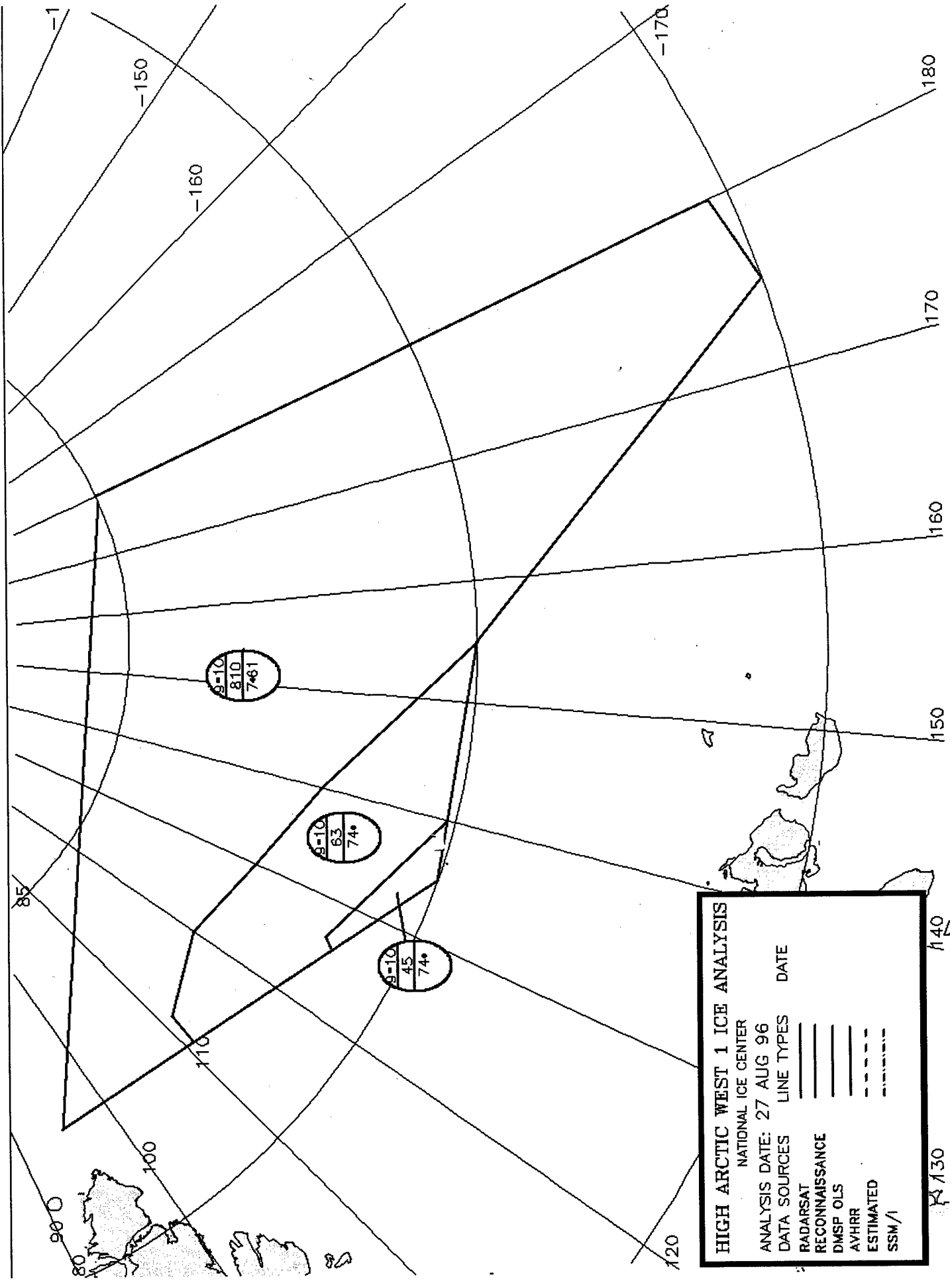
ANALYSIS DATE:	17 DEC 96
DATA SOURCES	DATE
RECONNAISSANCE.....	
SHIP.....	
SHORE.....	
VISIBLE/INFRARED.....	16 DEC 96
RADAR.....	

VISIBLE/INFRARED.....







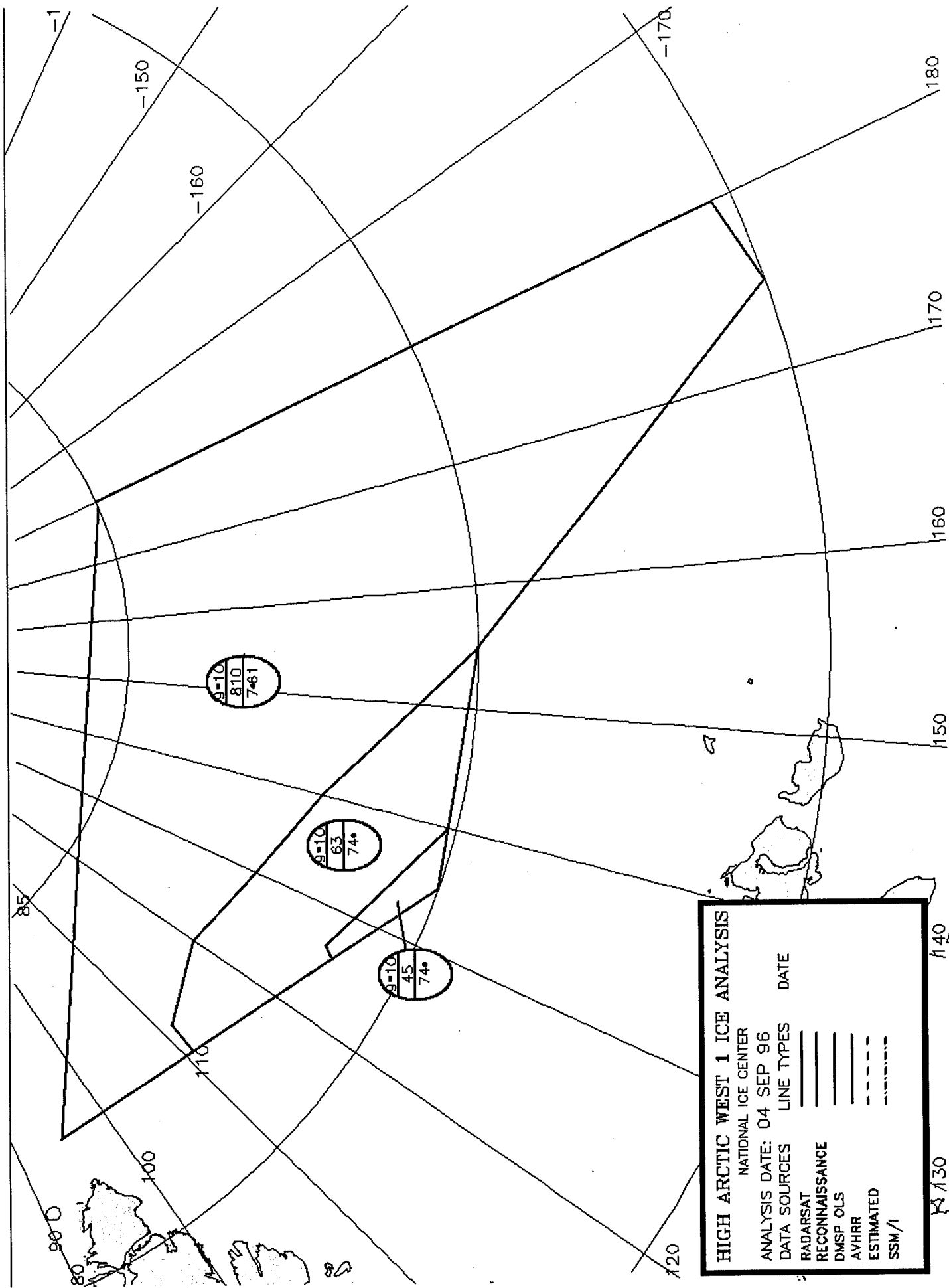


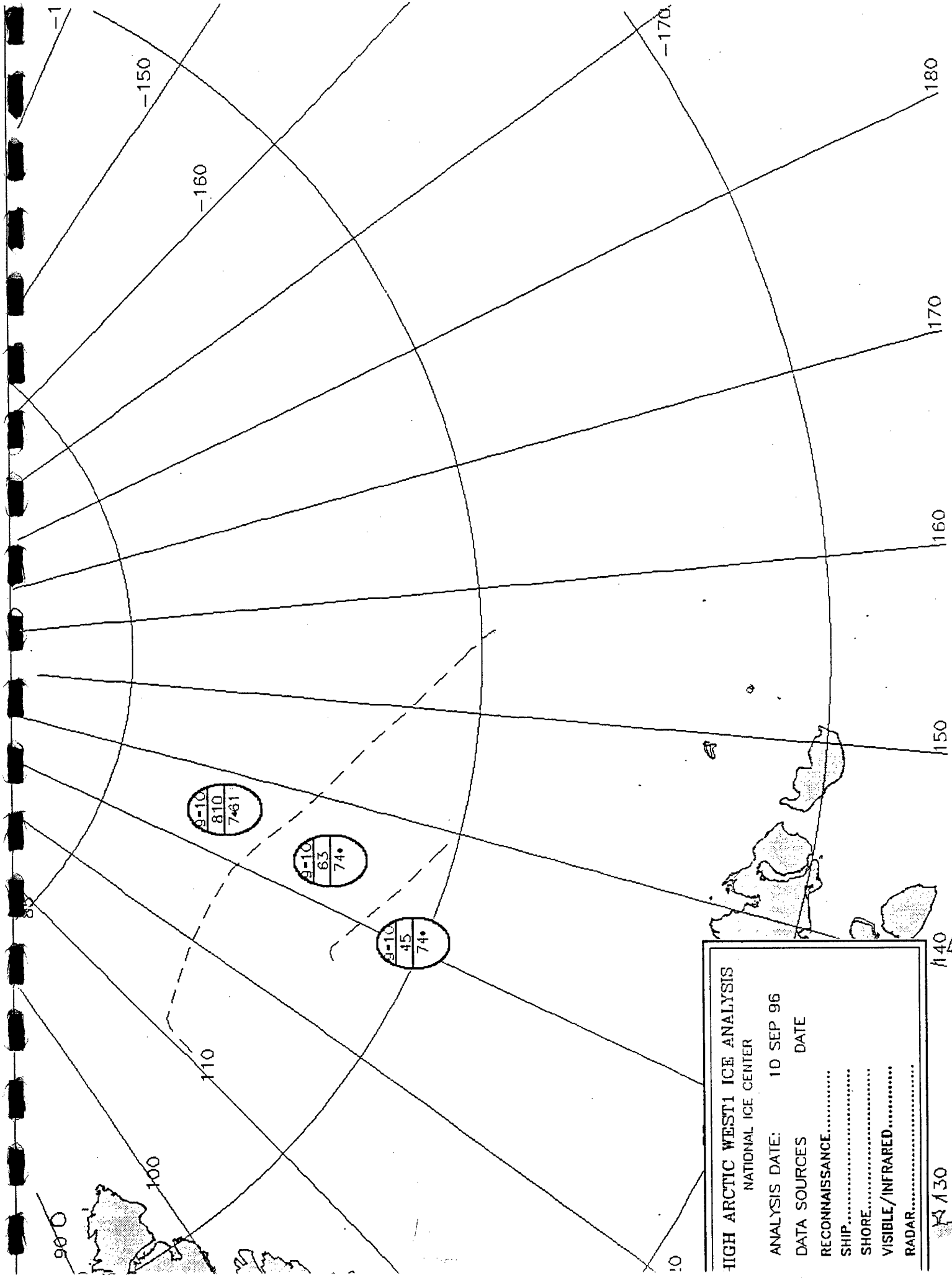
HIGH ARCTIC WEST 1 ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 27 AUG 96

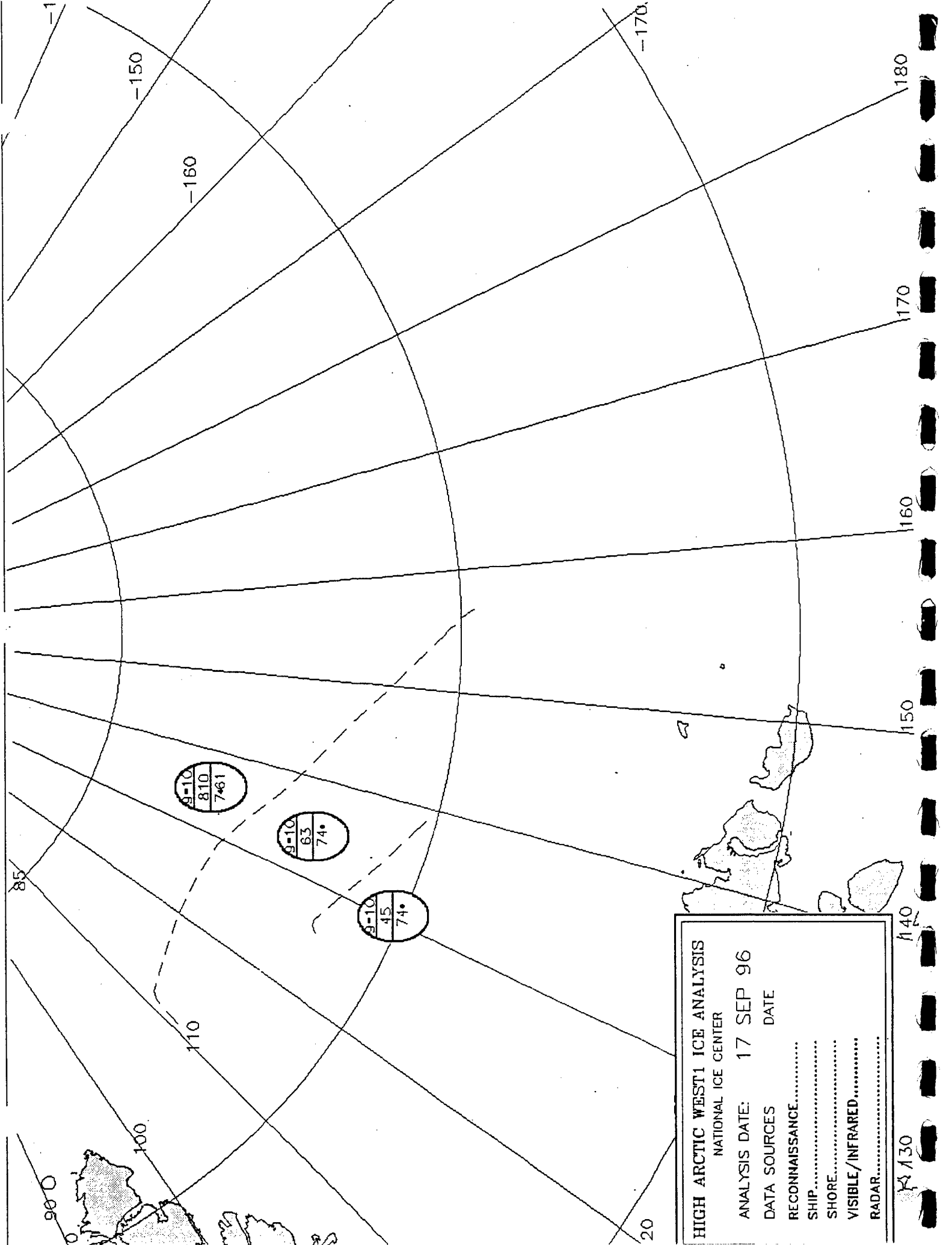
DATA SOURCES	LINE TYPES	DATE
RADARSAT	_____	_____
RECONNAISSANCE	_____	_____
DMSP OLS	_____	_____
AVHRR	_____	_____
ESTIMATED	-----	-----
SSM/I	-----	-----





HIGH ARCTIC WEST1 ICE ANALYSIS	
NATIONAL ICE CENTER	
ANALYSIS DATE:	10 SEP 96
DATA SOURCES	DATE
RECONNAISSANCE.....	
SHIP.....	
SHORE.....	
VISIBLE/INFRARED.....	
RADAR.....	

130

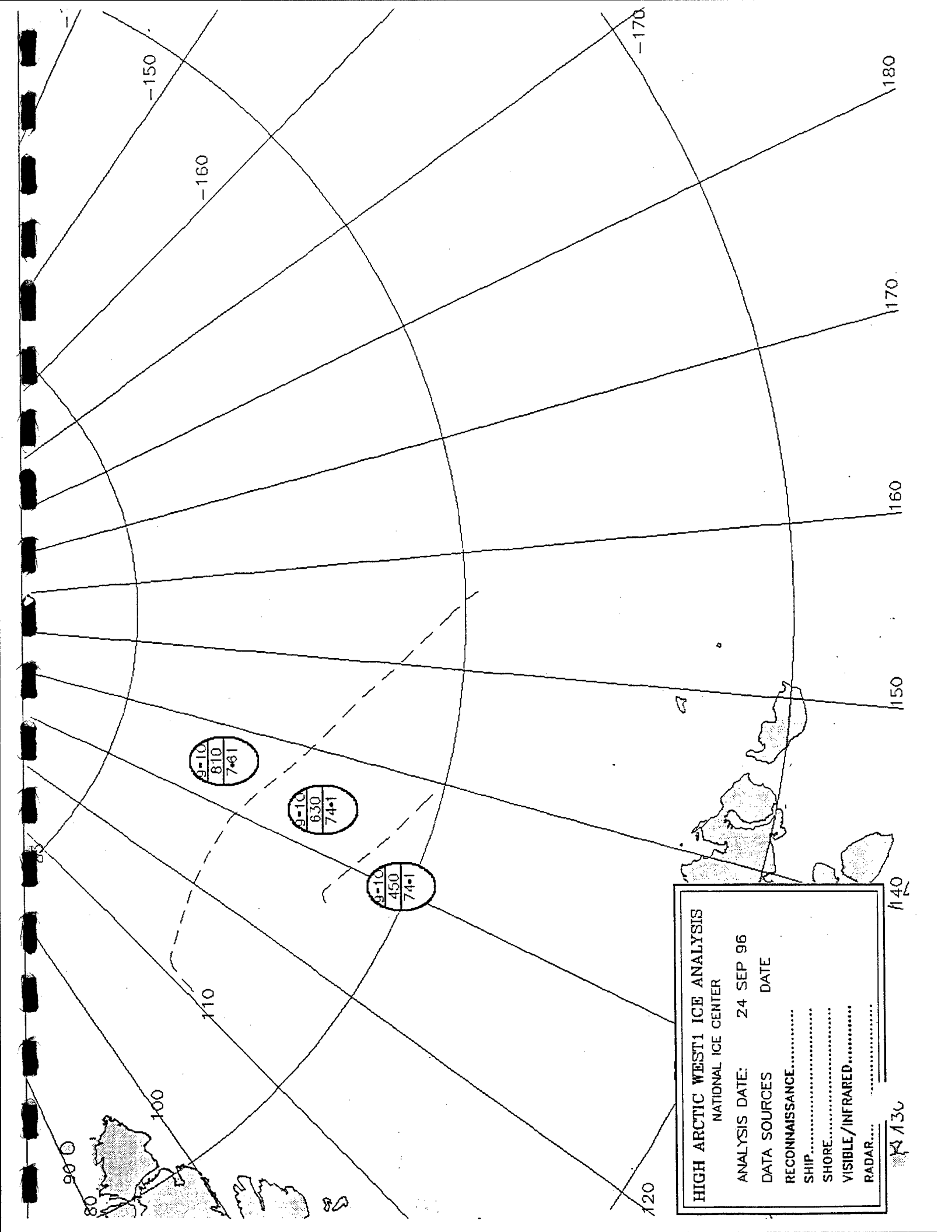


9-10
810
7461

9-10
63
74

9-10
45
74

HIGH ARCTIC WEST1 ICE ANALYSIS	
NATIONAL ICE CENTER	
ANALYSIS DATE: 17 SEP 96	DATE
DATA SOURCES	
RECONNAISSANCE.....	
SHIP.....	
SHORE.....	
VISIBLE/INFRARED.....	
RADAR.....	



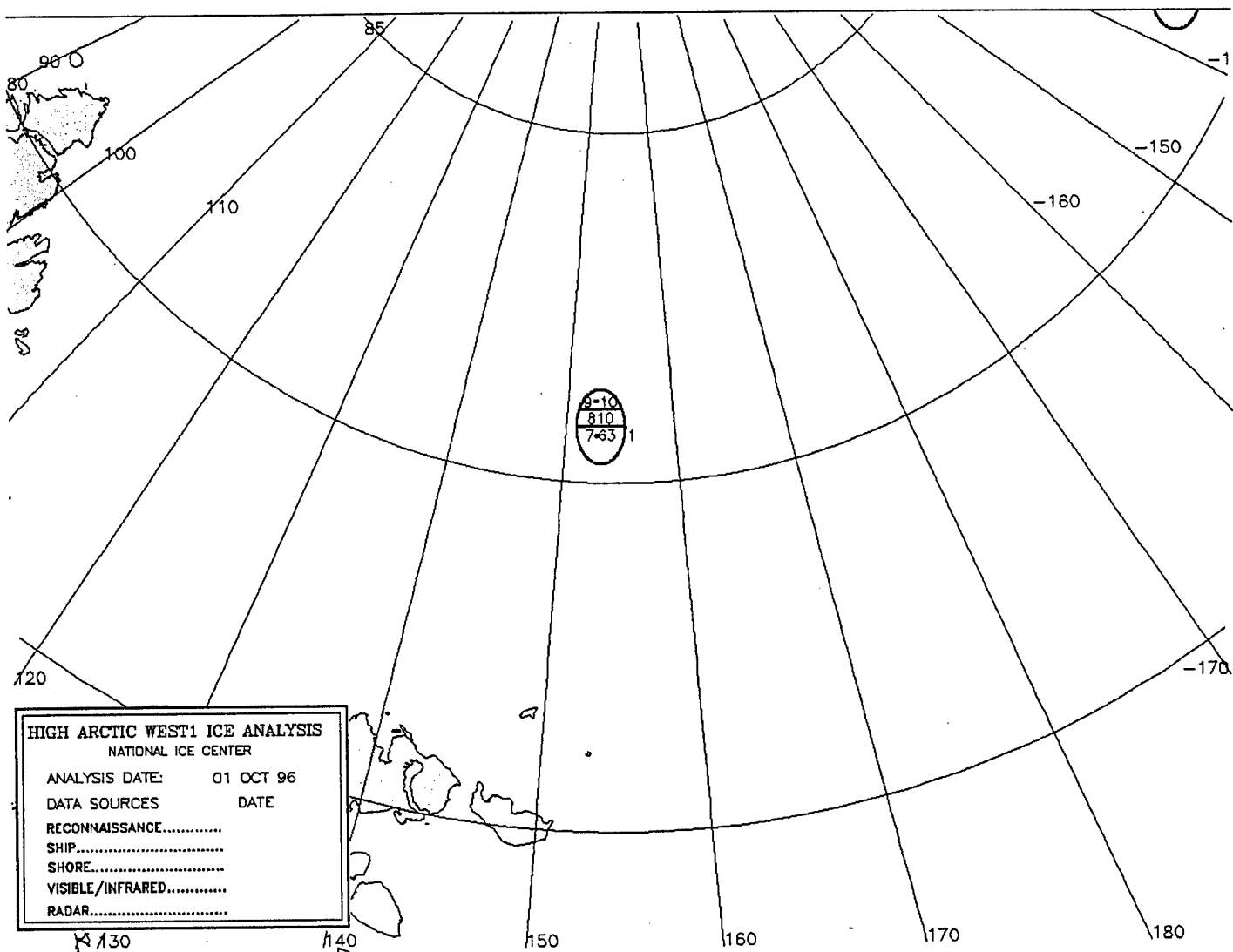
9-10
810
741

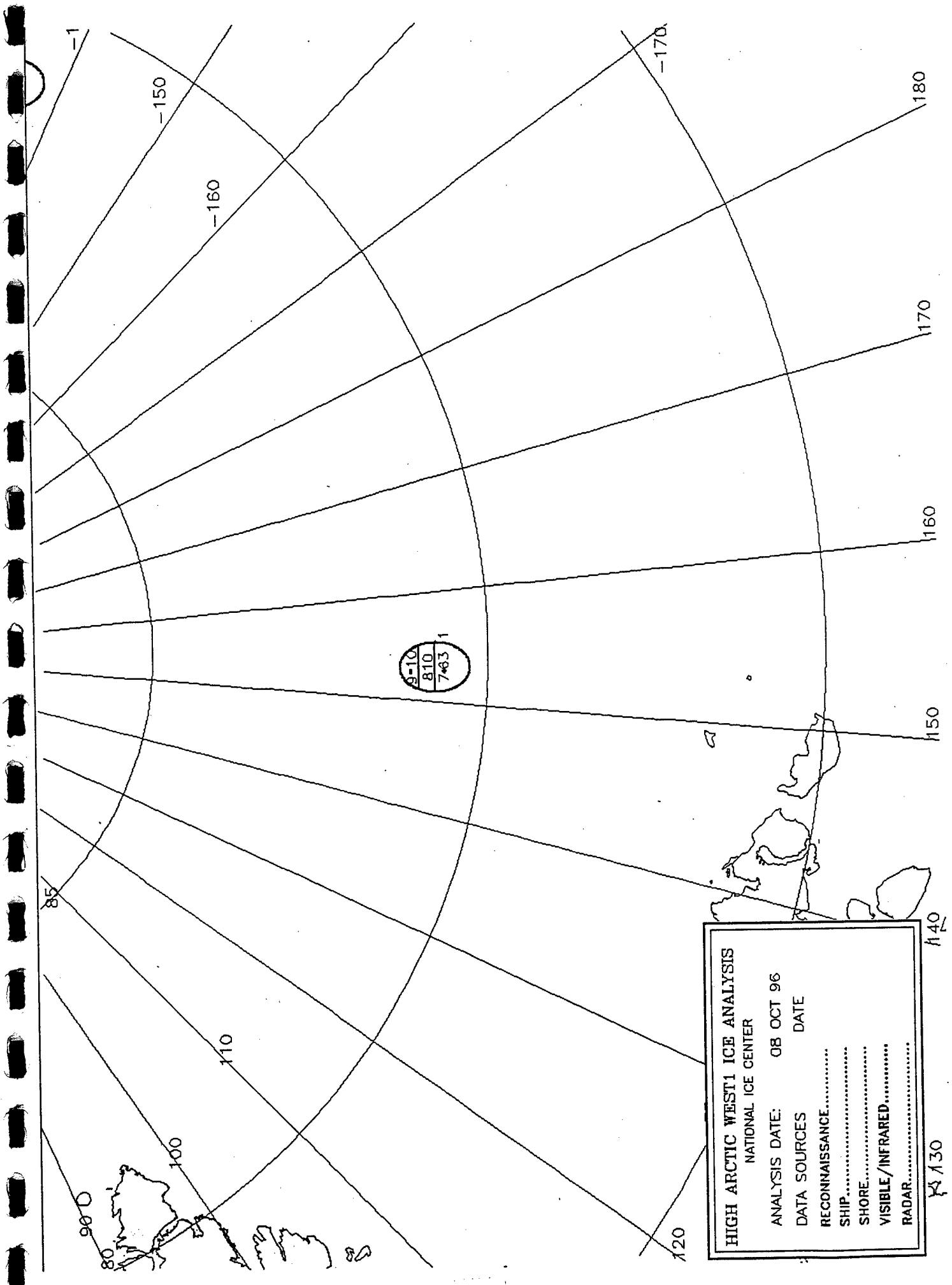
9-10
630
741

9-10
450
741

HIGH ARCTIC WEST1 ICE ANALYSIS	
NATIONAL ICE CENTER	
ANALYSIS DATE: 24 SEP 96	DATE
DATA SOURCES	
RECONNAISSANCE.....	
SHIP.....	
SHORE.....	
VISIBLE/INFRARED.....	
RADAR....	

130





HIGH ARCTIC WEST1 ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 08 OCT 96

DATA SOURCES DATE

RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED.....

RADAR.....

9-10
810
7463 1

HIGH ARCTIC WEST1 ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 15 OCT 96

DATA SOURCES DATE

RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED.....

RADAR.....

130

140

150

160

170

180

-170

-160

-150

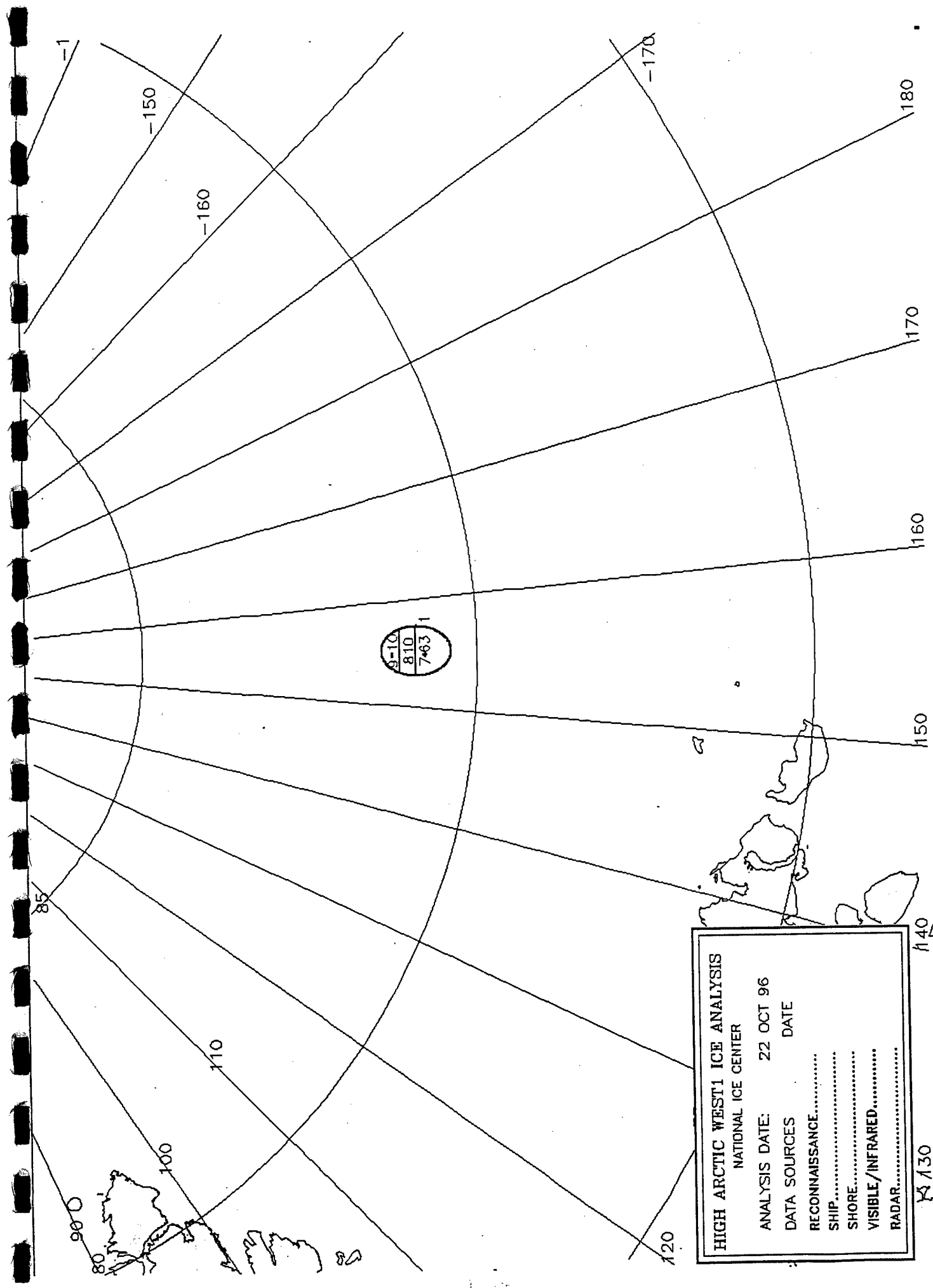
-1

110

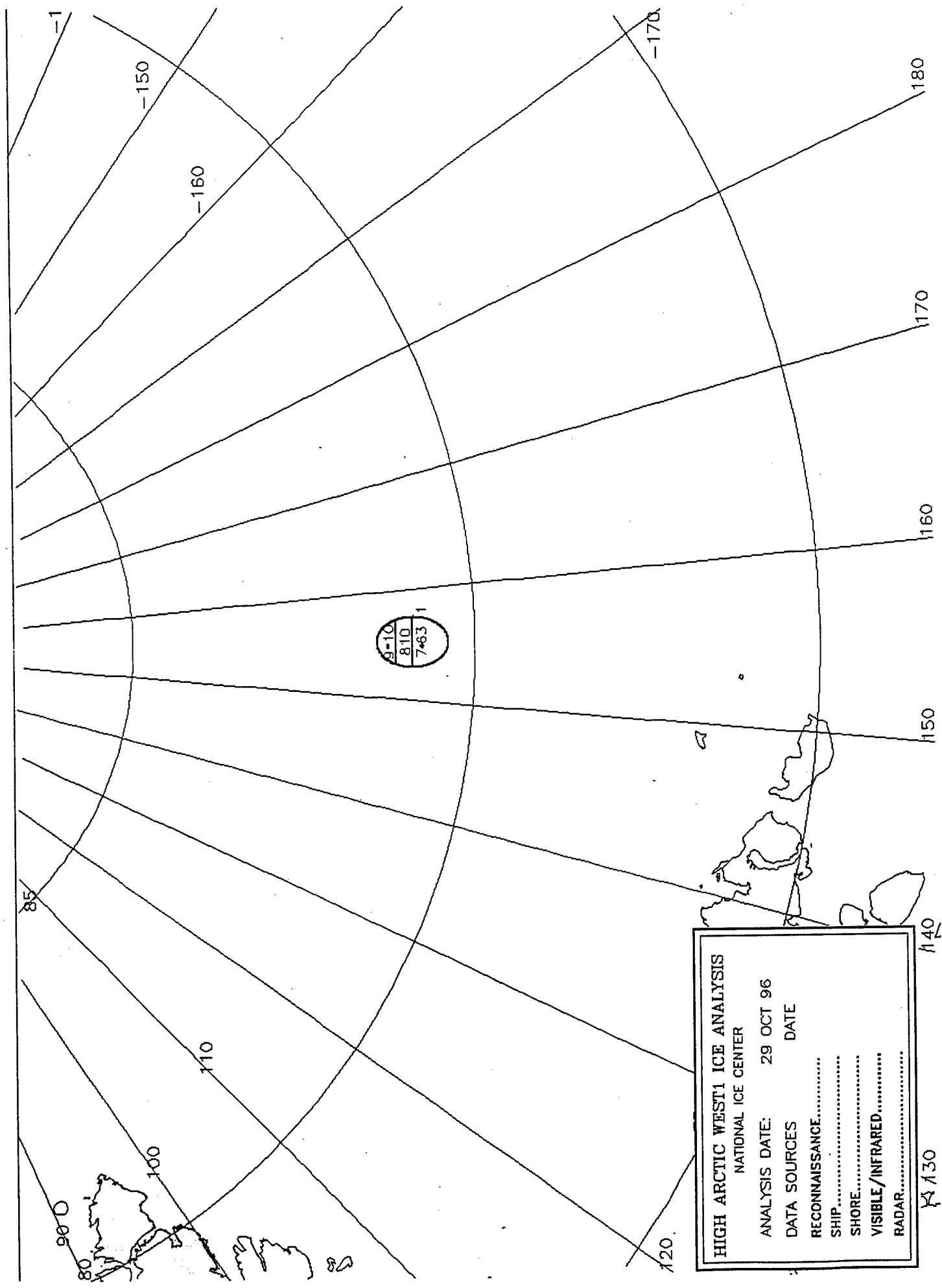
100

90 0

85



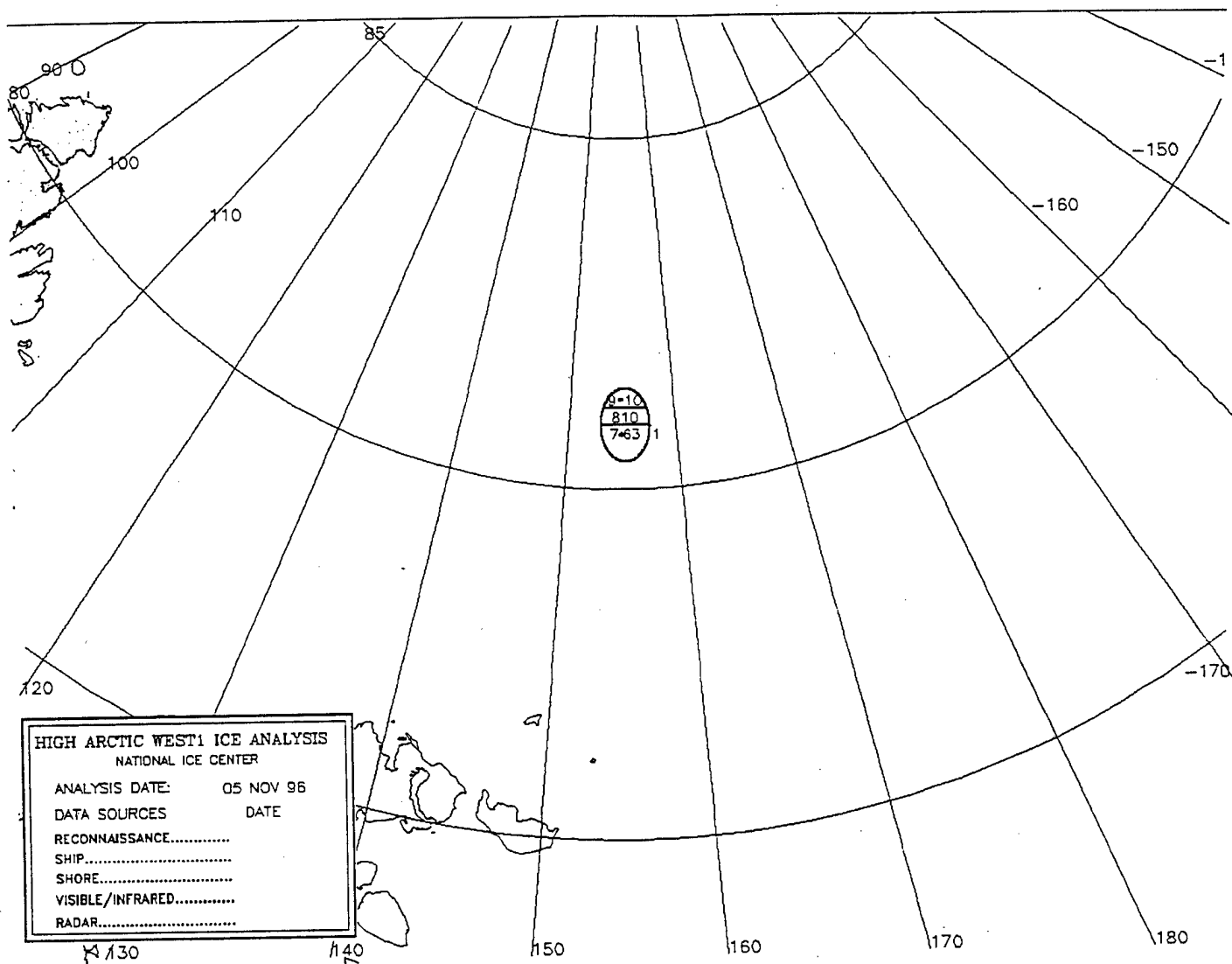
HIGH ARCTIC WEST1 ICE ANALYSIS	
NATIONAL ICE CENTER	
ANALYSIS DATE: 22 OCT 96	DATE
DATA SOURCES	
RECONNAISSANCE.....	
SHIP.....	
SHORE.....	
VISIBLE/INFRARED.....	
RADAR.....	

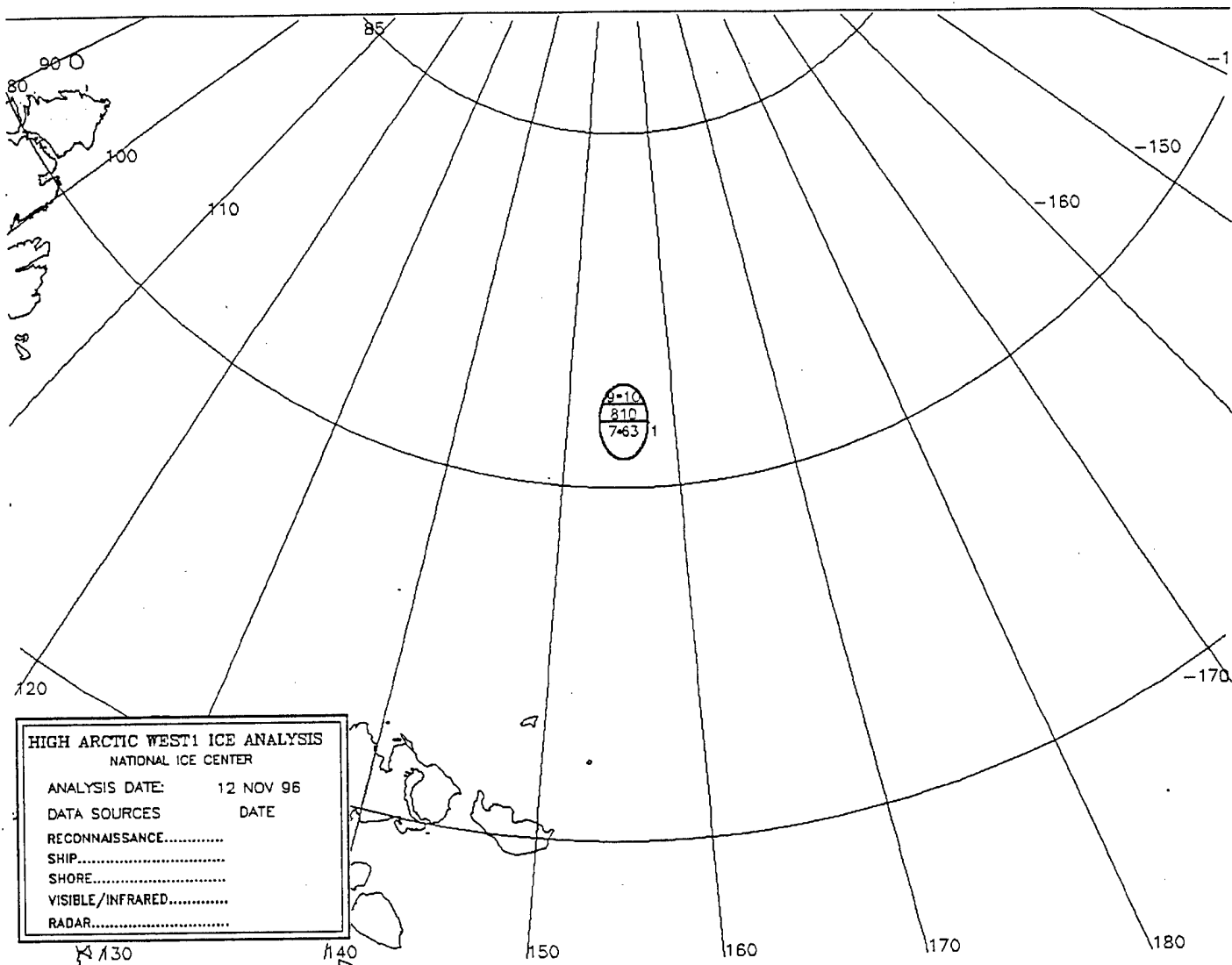


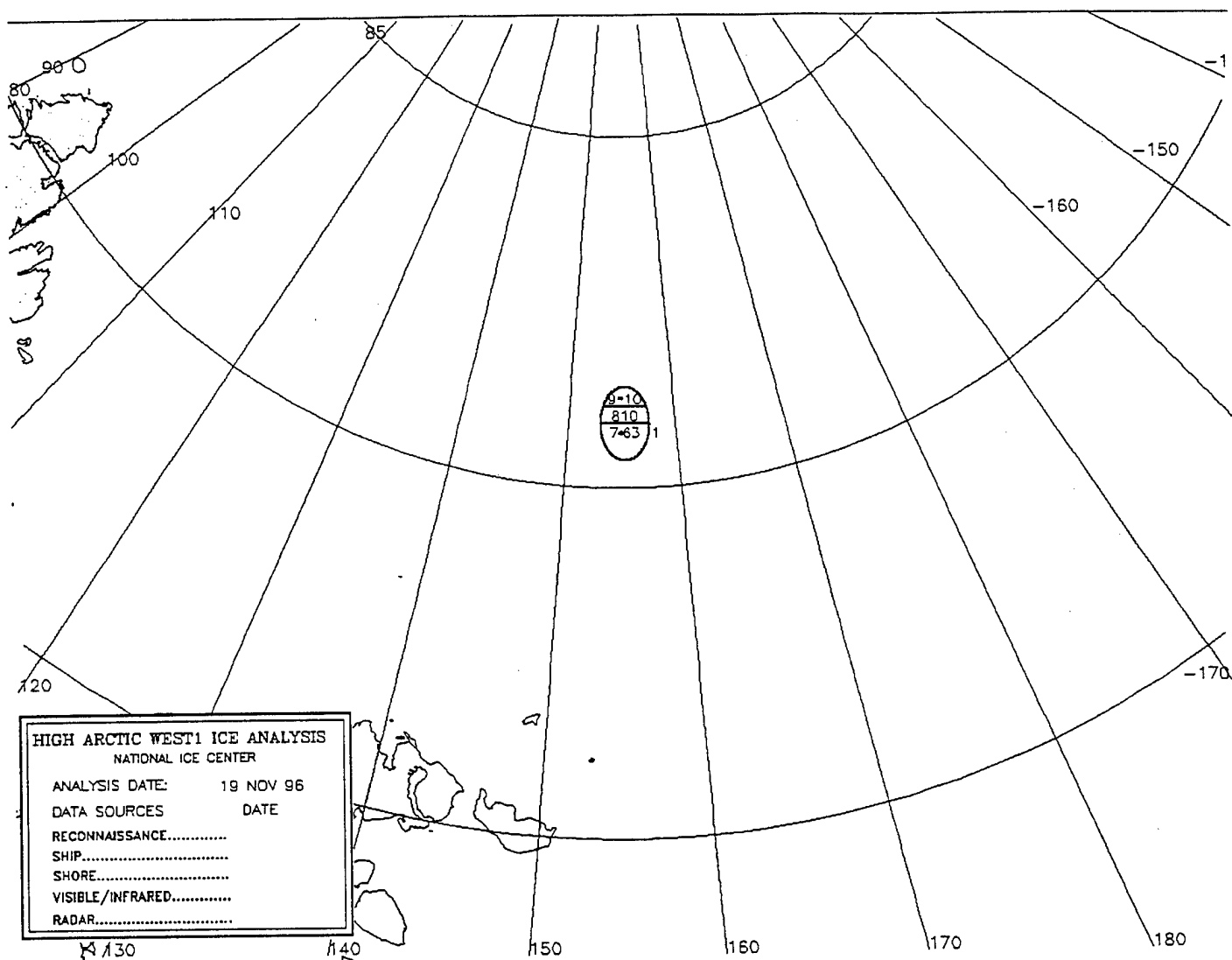
HIGH ARCTIC WEST1 ICE ANALYSIS	
NATIONAL ICE CENTER	
ANALYSIS DATE:	29 OCT 96
DATA SOURCES	DATE
RECONNAISSANCE.....	
SHIP.....	
SHORE.....	
VISIBLE/INFRARED.....	
RADAR.....	

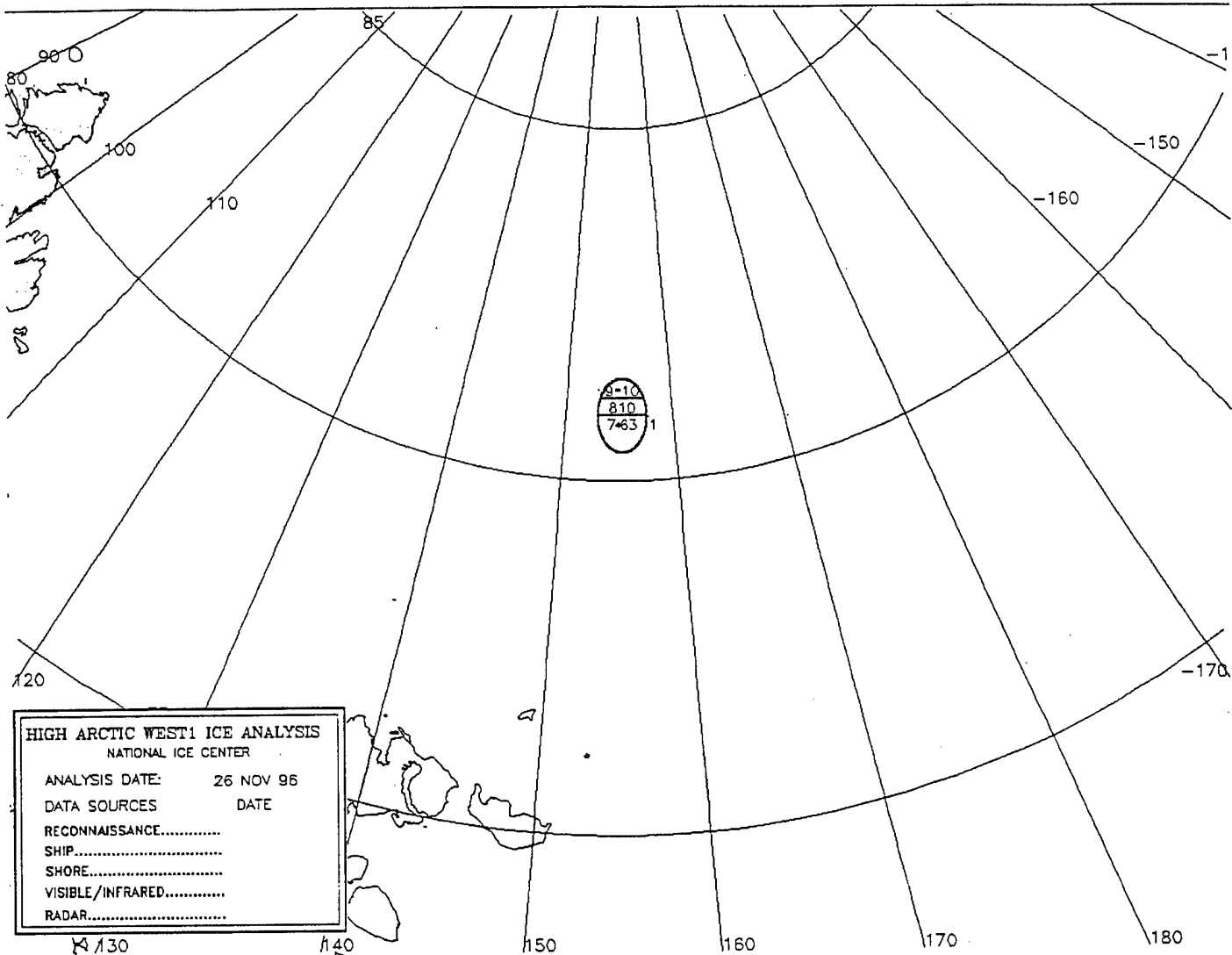
130

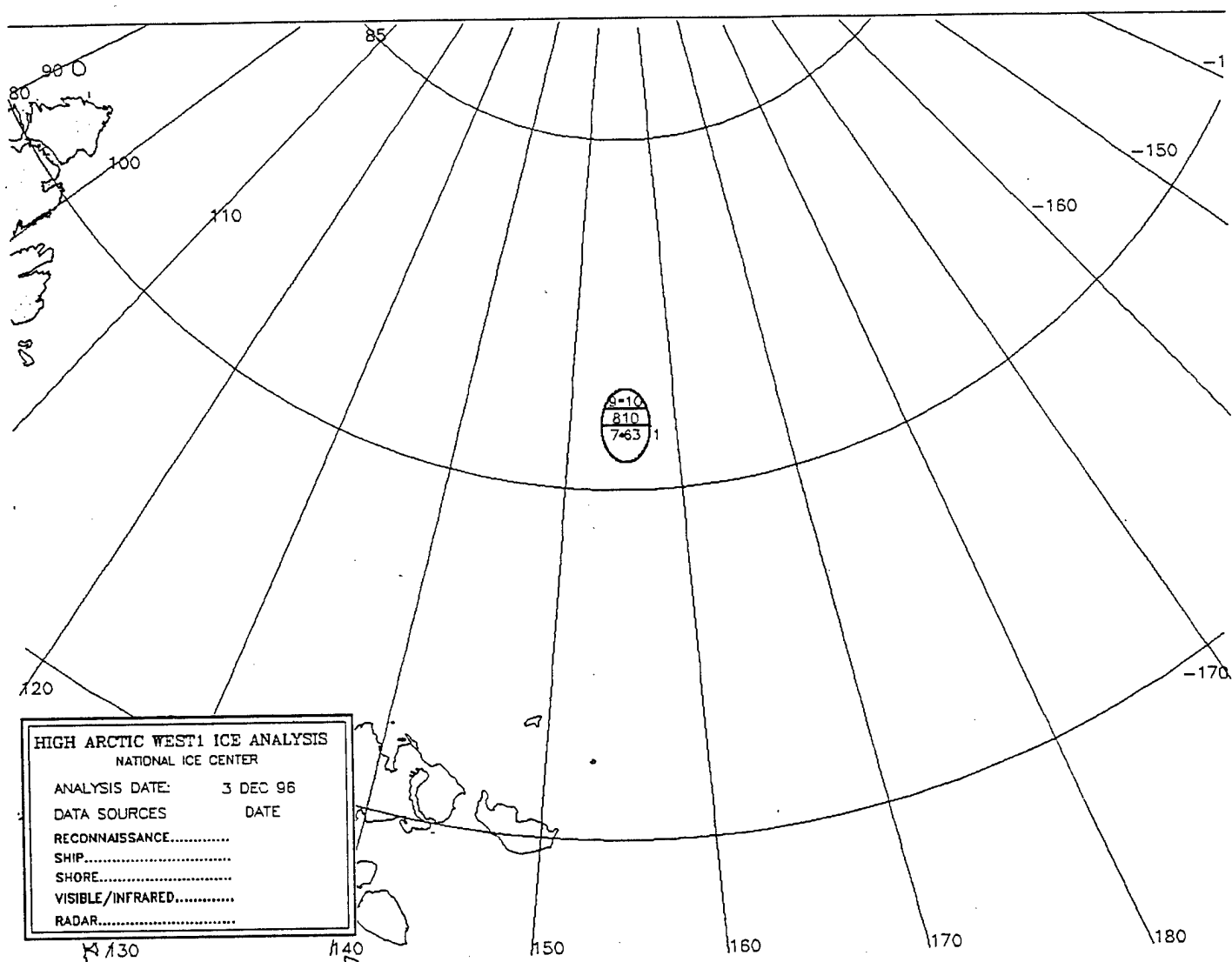
140

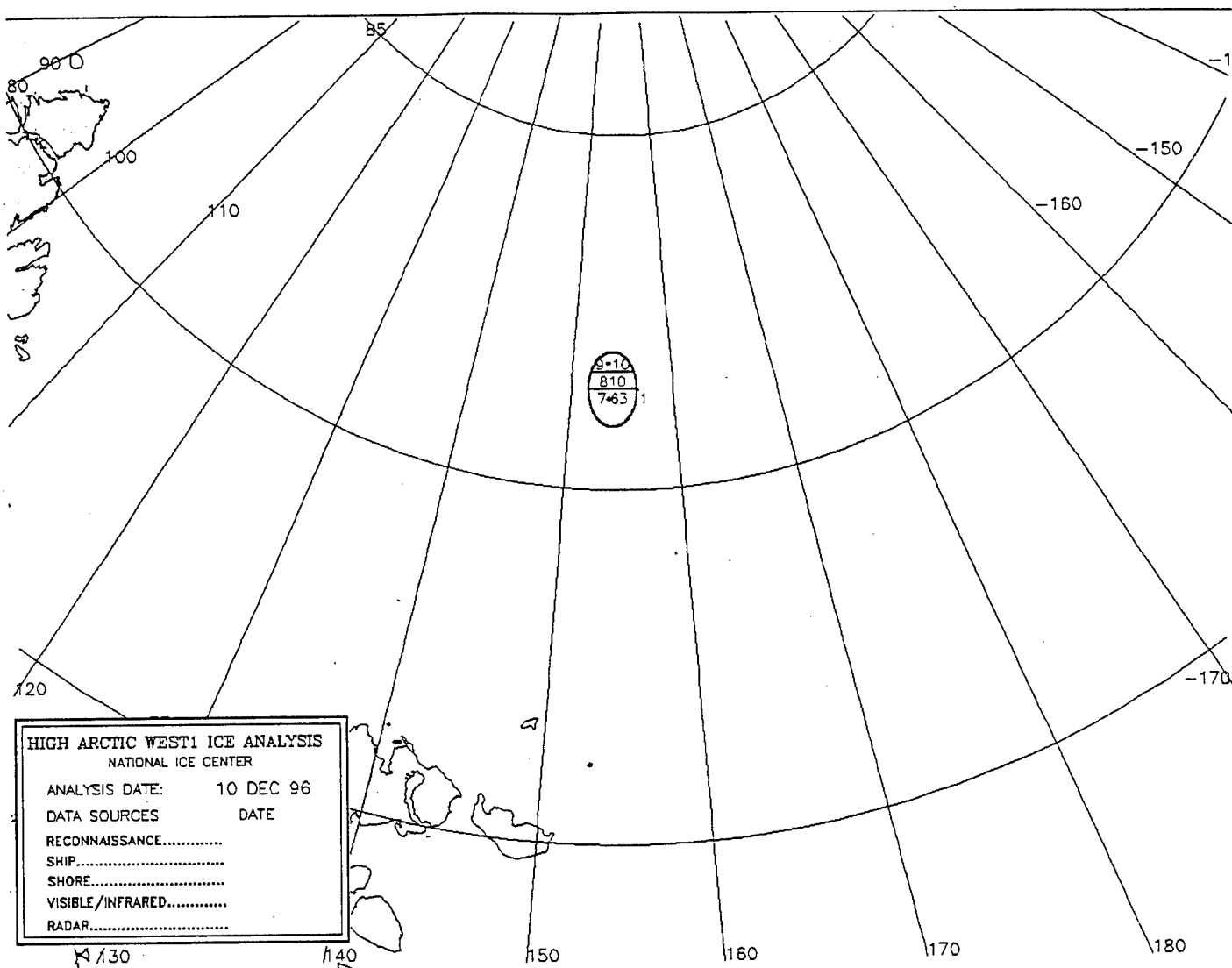


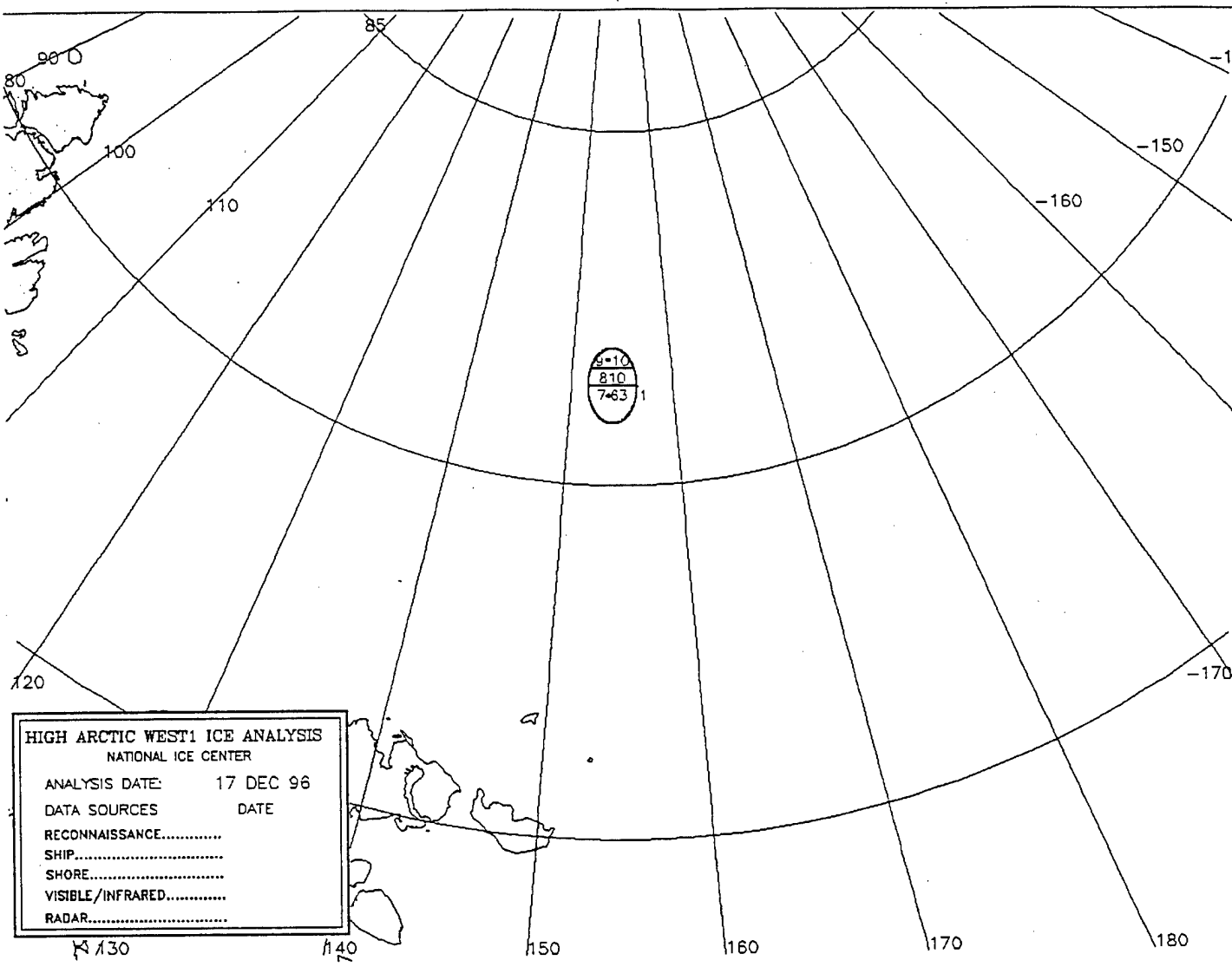


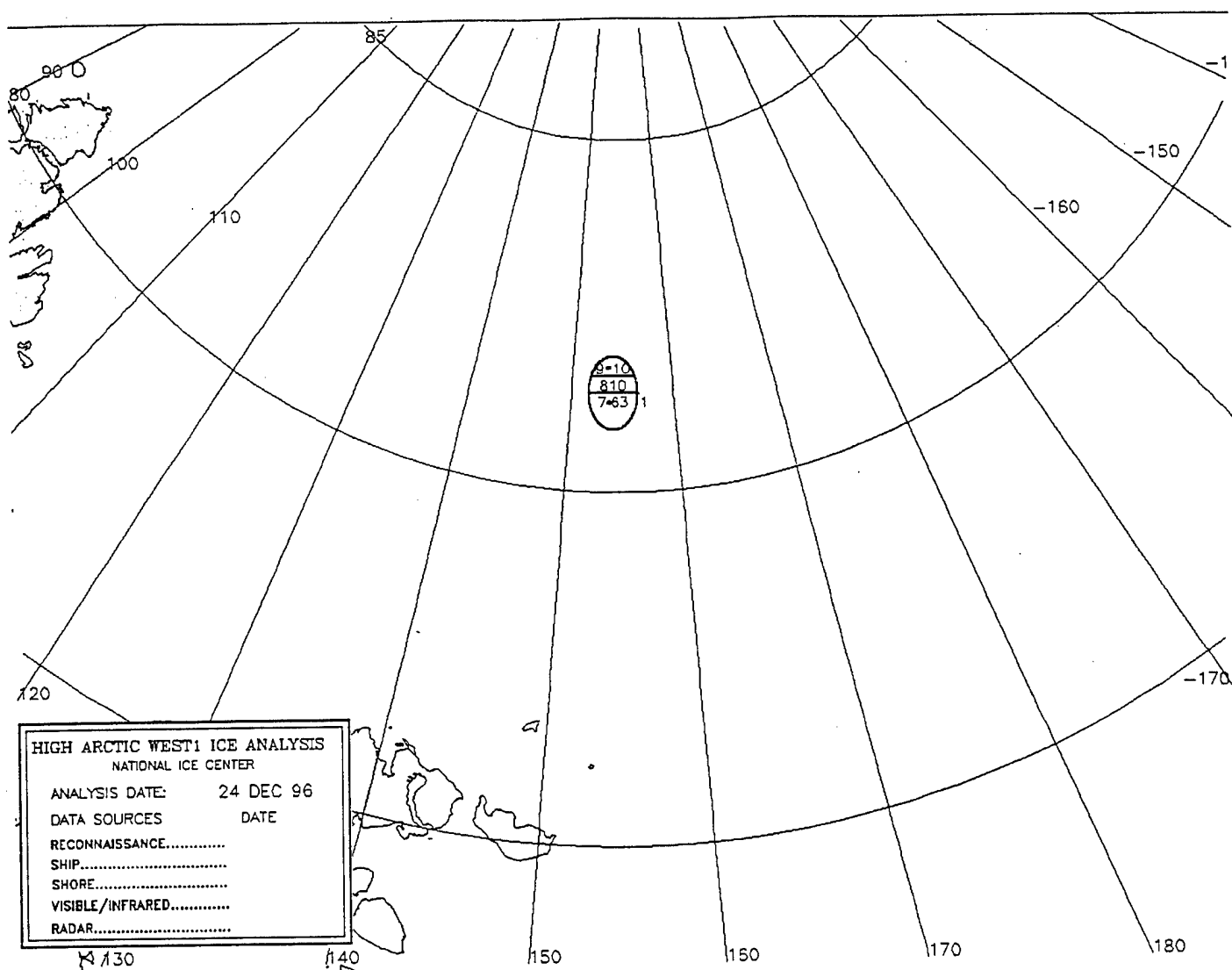


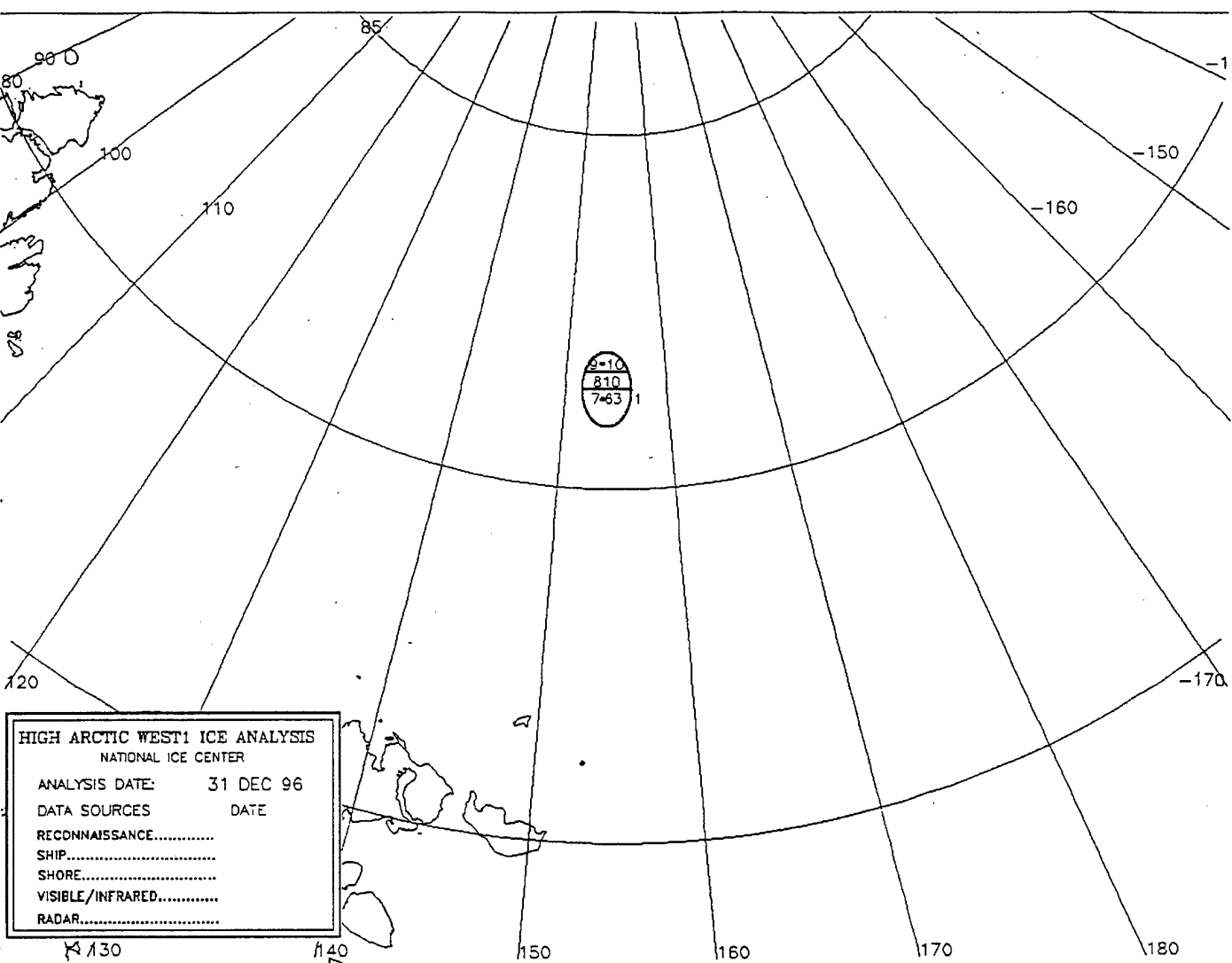


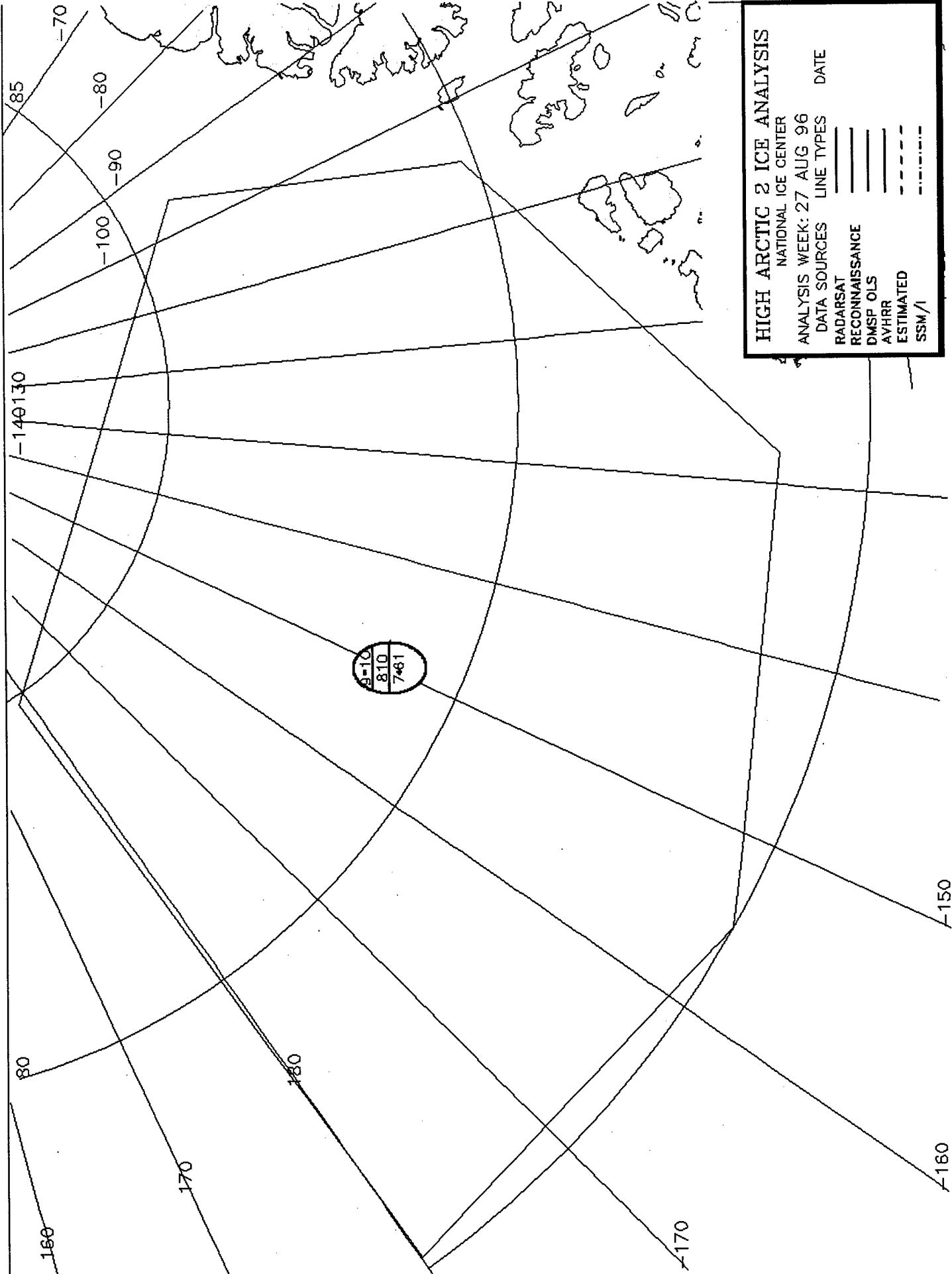




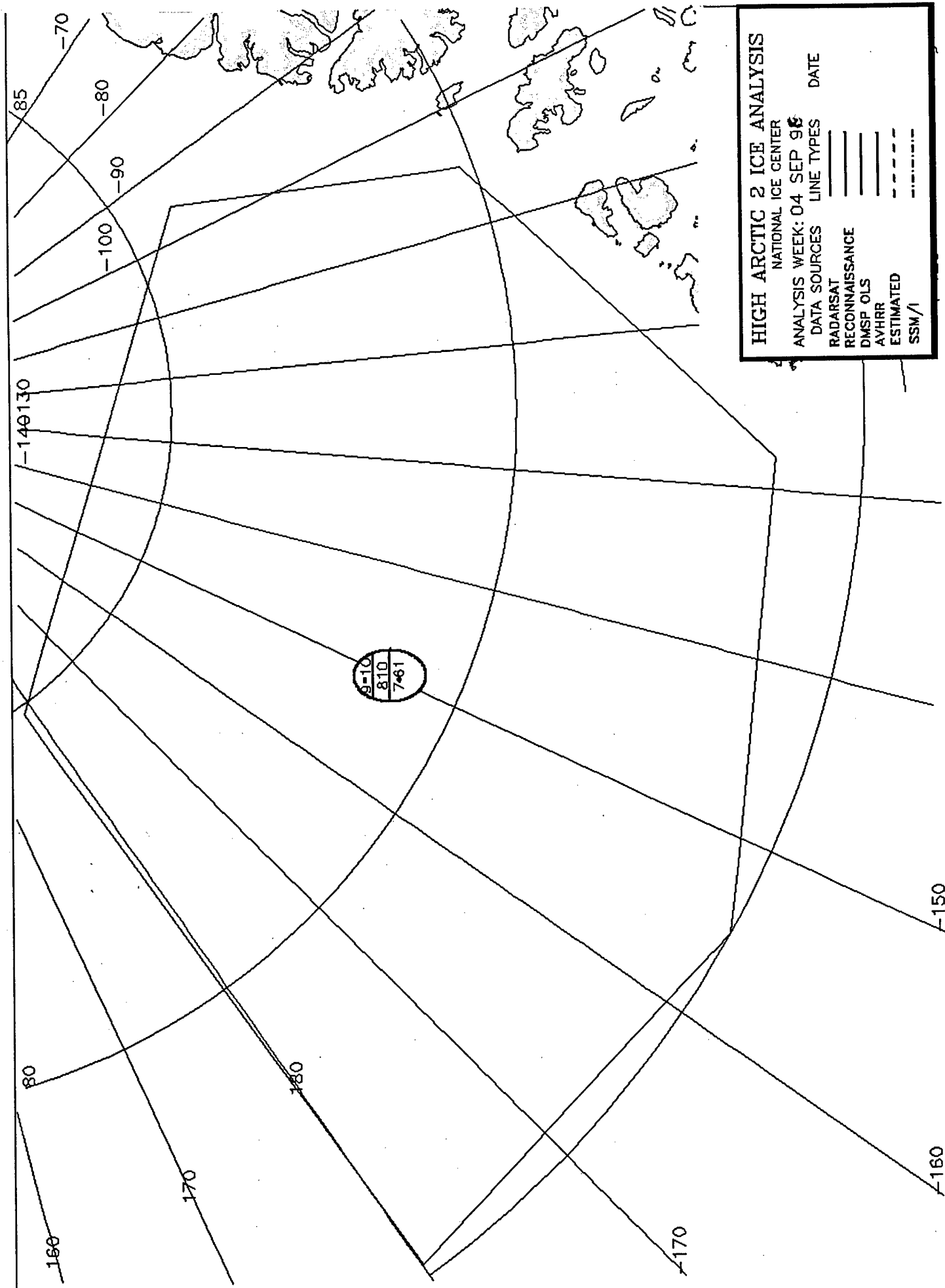


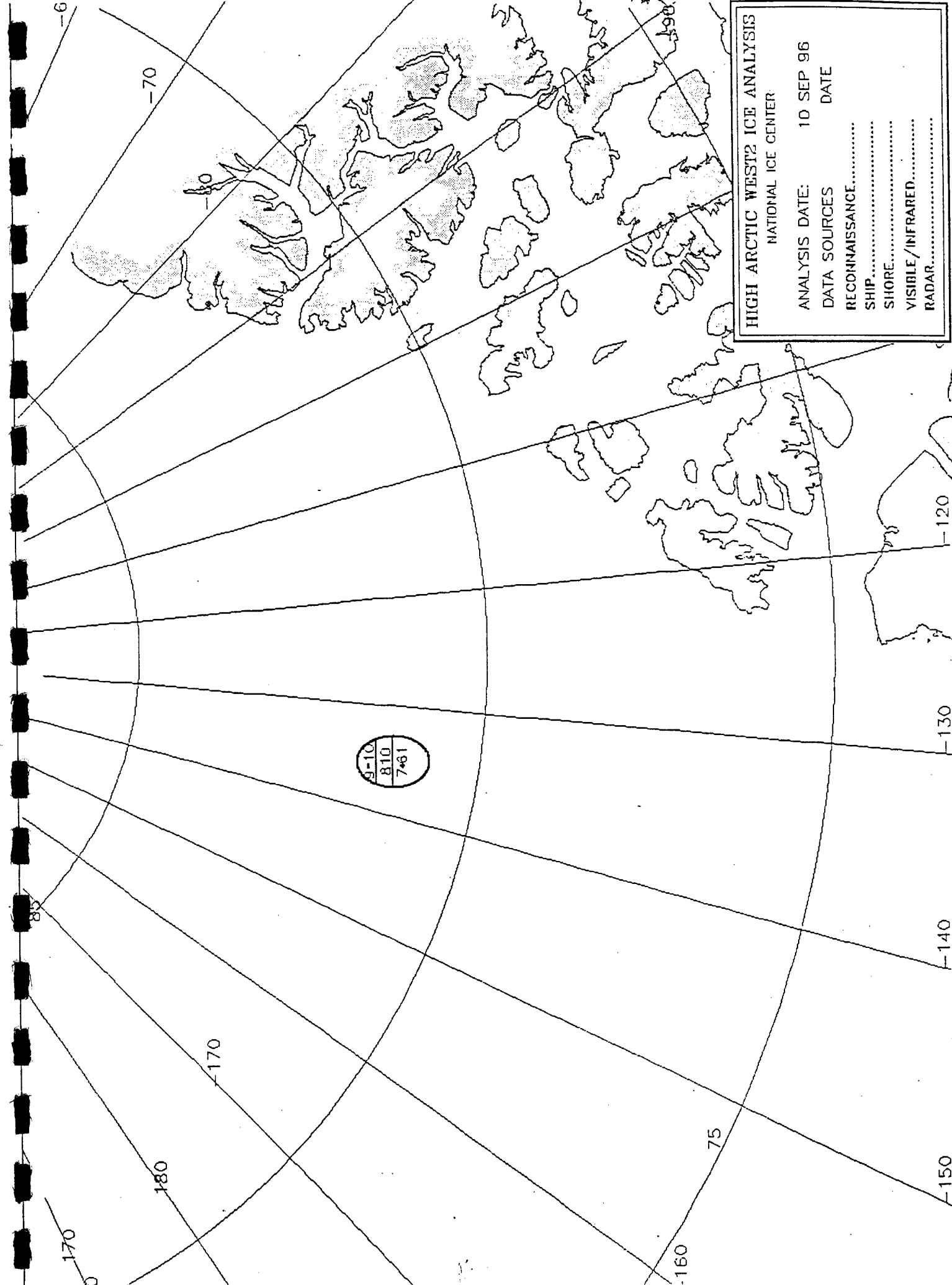




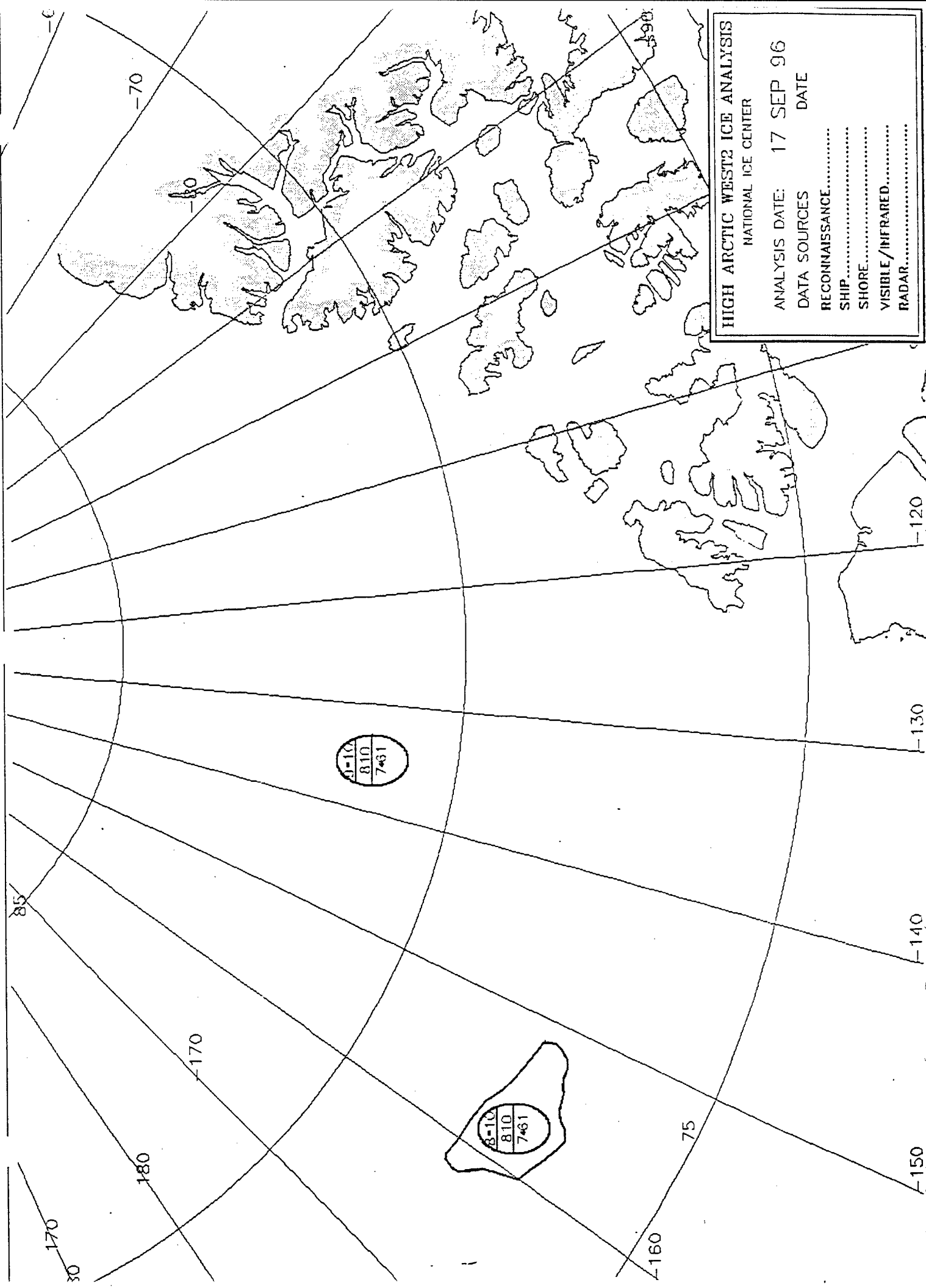


HIGH ARCTIC 2 ICE ANALYSIS			
NATIONAL ICE CENTER			
ANALYSIS WEEK: 27 AUG 96			
DATA SOURCES	LINE TYPES	DATE	
RADARSAT	_____	_____	
RECONNAISSANCE	_____	_____	
DMSP OLS	_____	_____	
AVHRR	_____	_____	
ESTIMATED	_____	_____	
SSM/I	_____	_____	

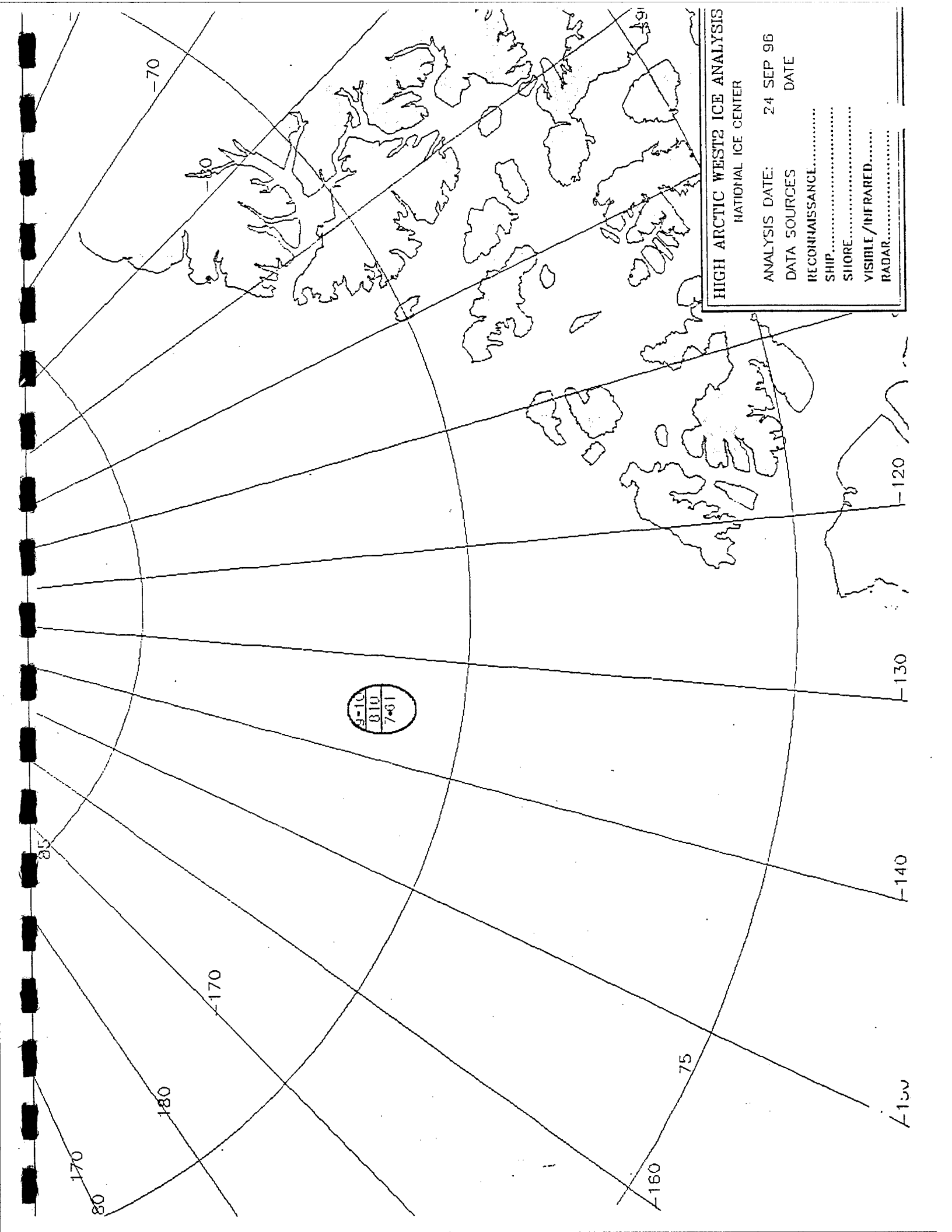




HIGH ARCTIC WEST2 ICE ANALYSIS	
NATIONAL ICE CENTER	
ANALYSIS DATE:	10 SEP 96
DATA SOURCES	DATE
RECONNAISSANCE.....	
SHIP.....	
SHORE.....	
VISIBLE/INFRARED.....	
RADAR.....	



HIGH ARCTIC WEST2 ICE ANALYSIS	
NATIONAL ICE CENTER	
ANALYSIS DATE: 17 SEP 96	DATE
DATA SOURCES	
RECONNAISSANCE.....	
SHIP.....	
SHORE.....	
VISIBLE/INFRARED.....	
RADAR.....	



HIGH ARCTIC WEST2 ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 24 SEP 96

DATA SOURCES

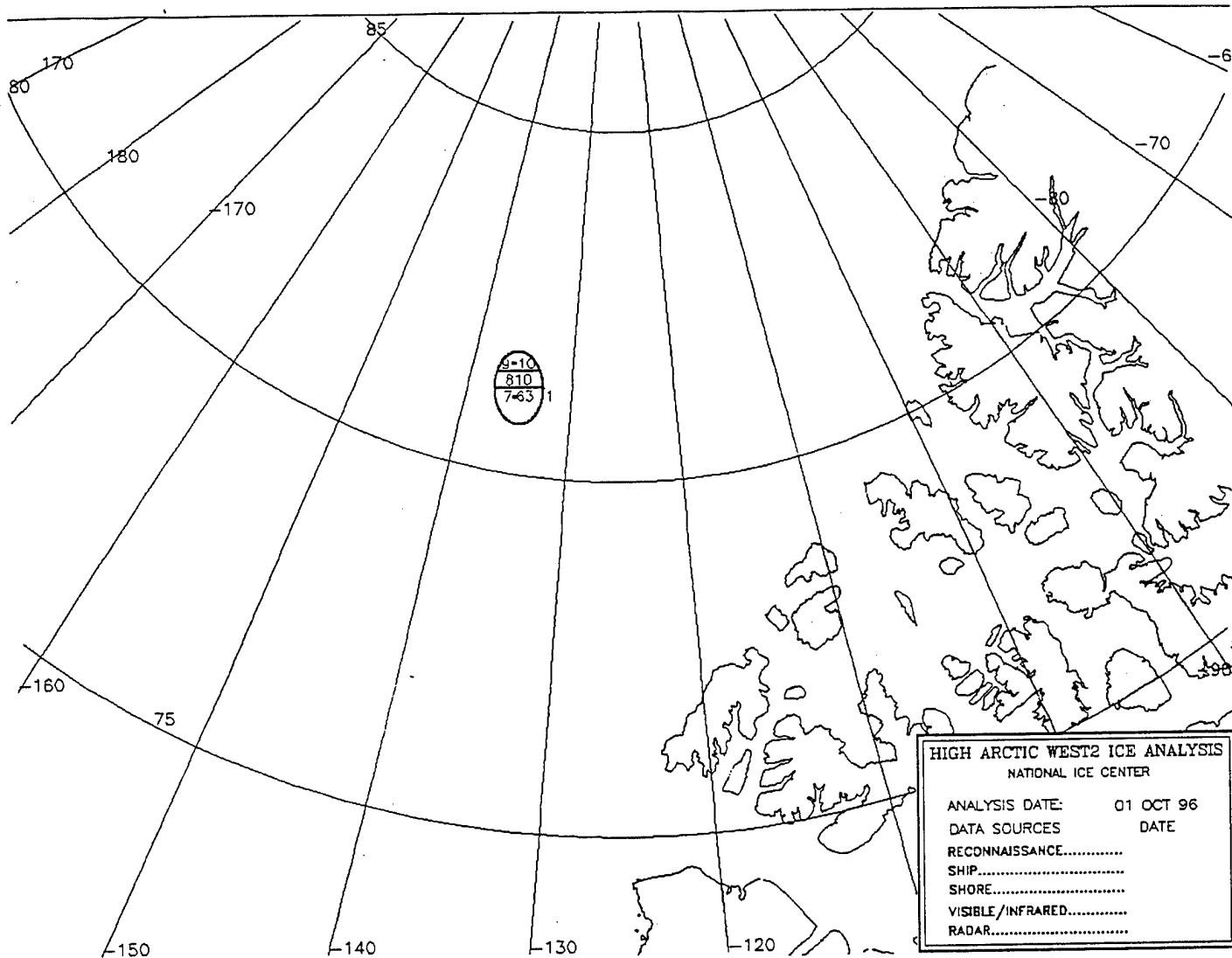
RECONNAISSANCE

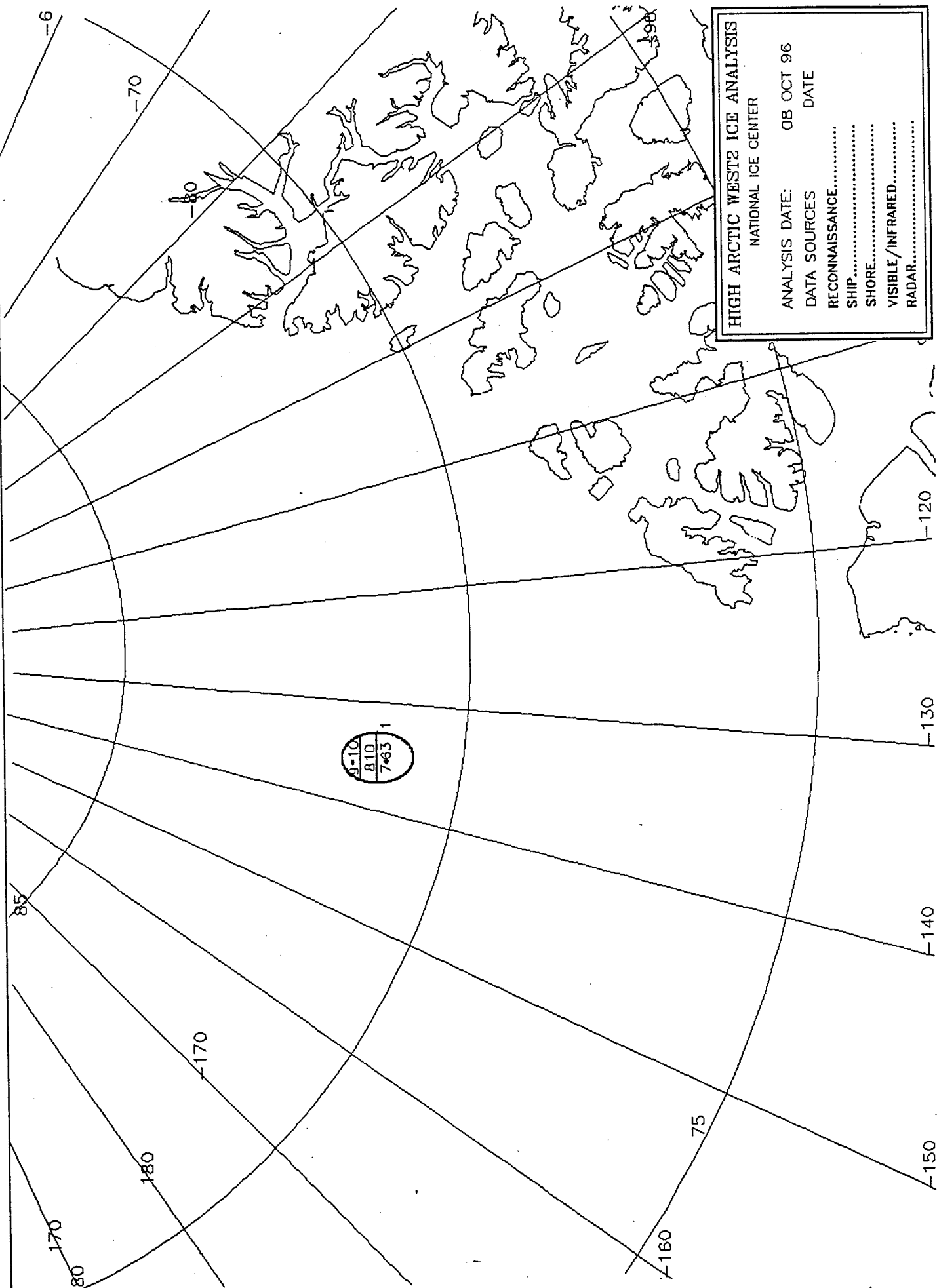
SHIP

SHORE

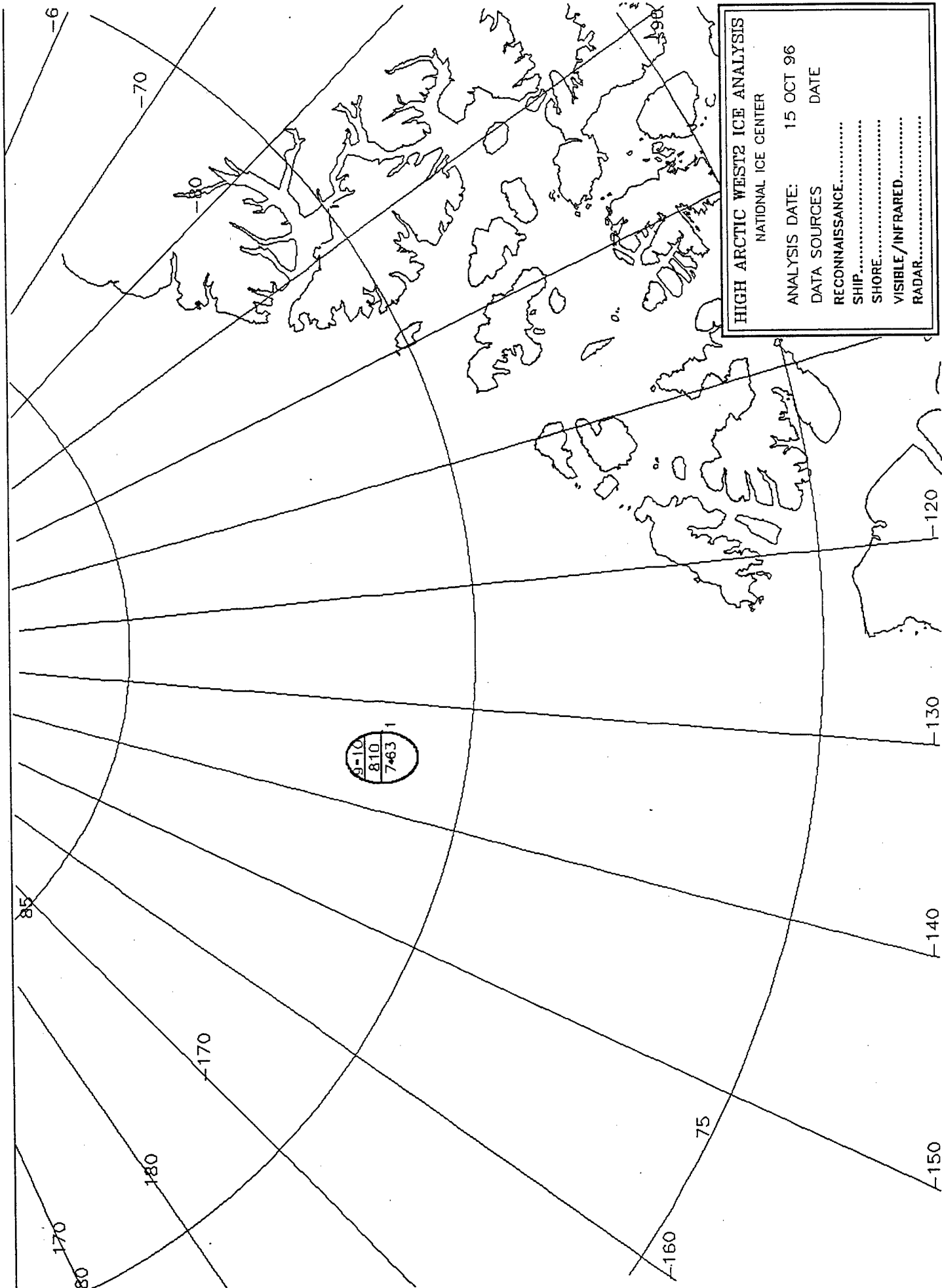
VISIBLE/INFRARED

RADAR





HIGH ARCTIC WEST2 ICE ANALYSIS	
NATIONAL ICE CENTER	
ANALYSIS DATE:	08 OCT 96
DATA SOURCES	DATE
RECONNAISSANCE.....	
SHIP.....	
SHORE.....	
VISIBLE/INFRARED.....	
RADAR.....	



HIGH ARCTIC WEST2 ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 15 OCT 96

DATA SOURCES DATE

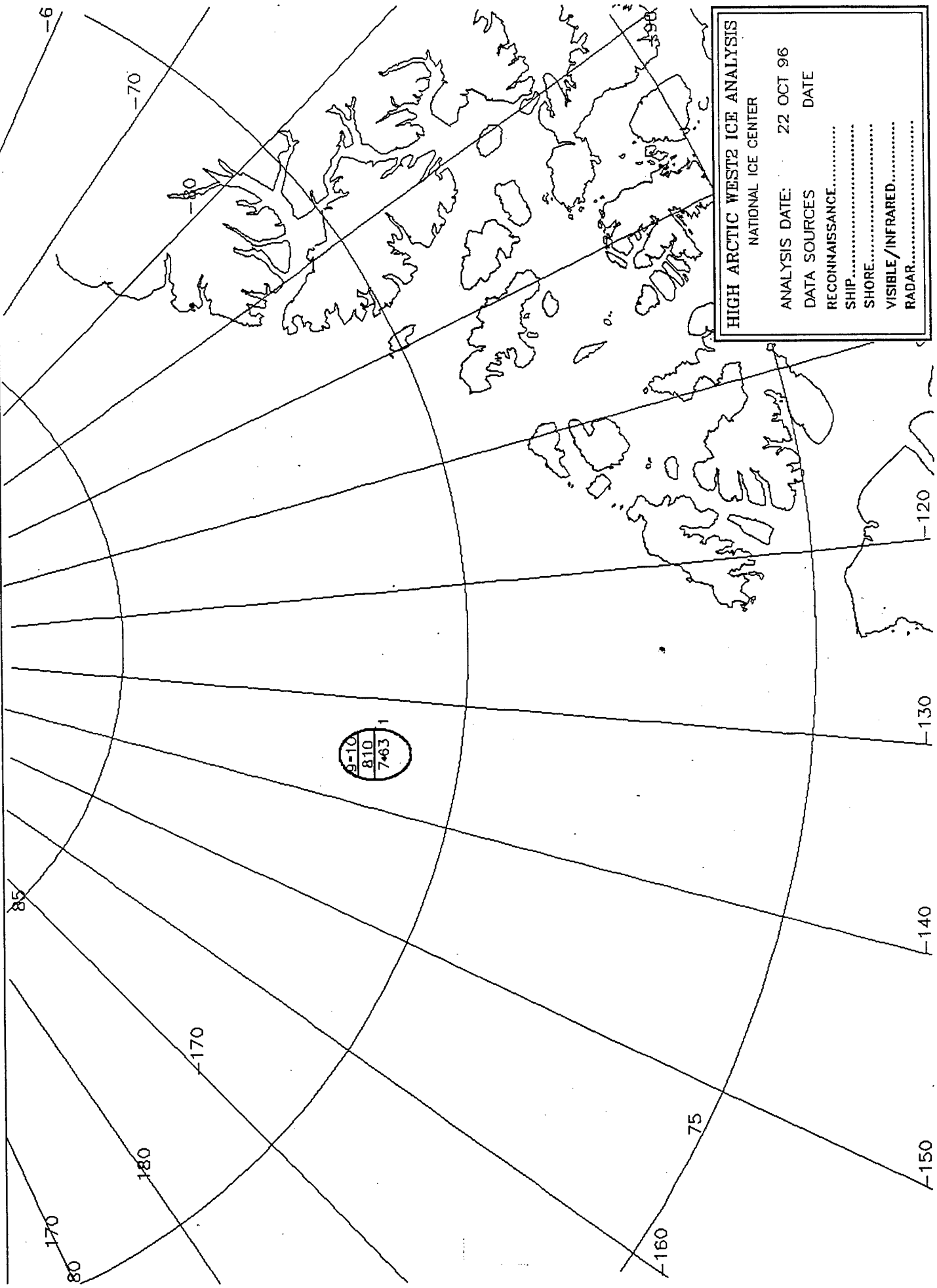
RECONNAISSANCE.....

SHIP.....

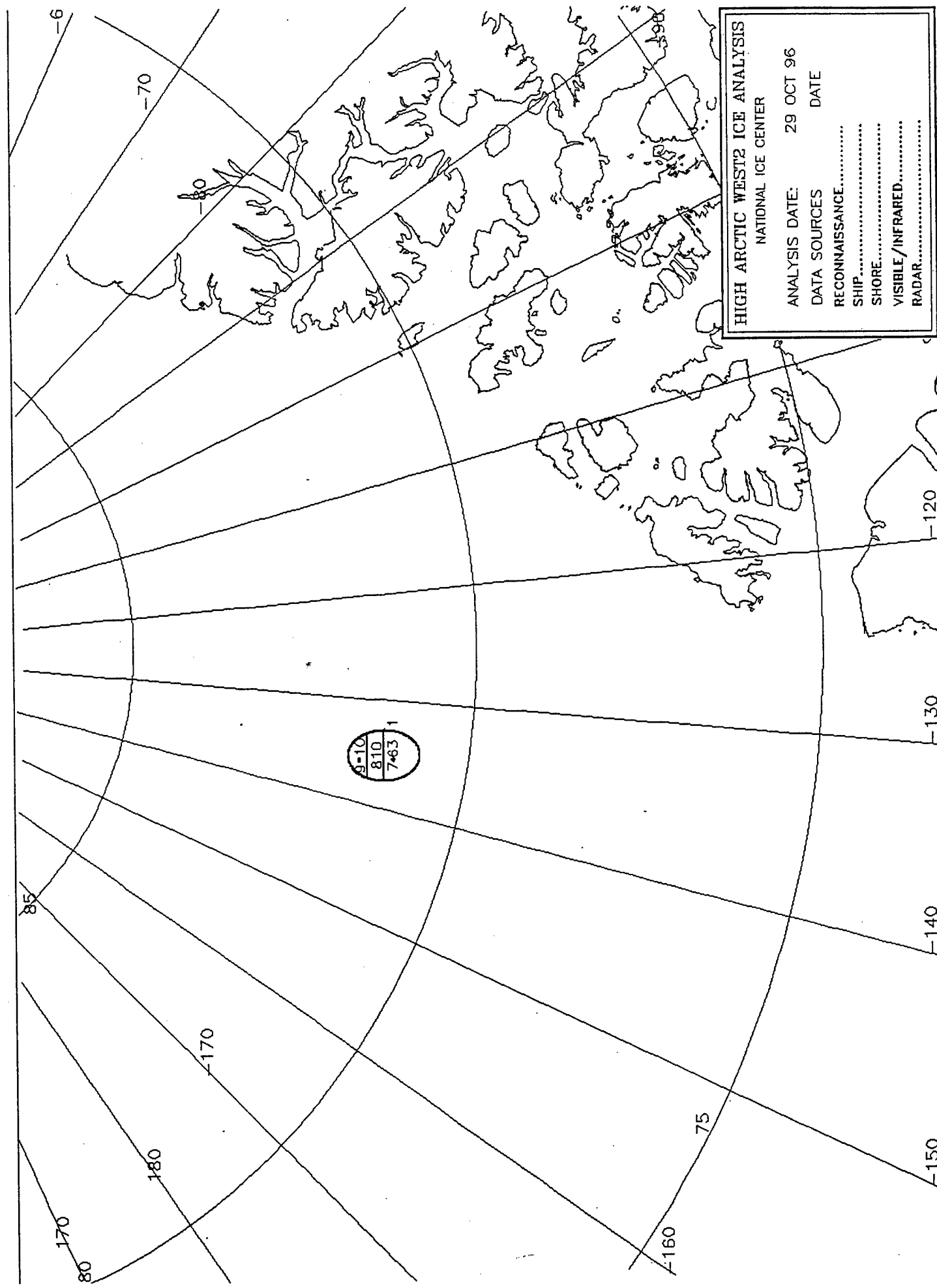
SHORE.....

VISIBLE/INFRARED.....

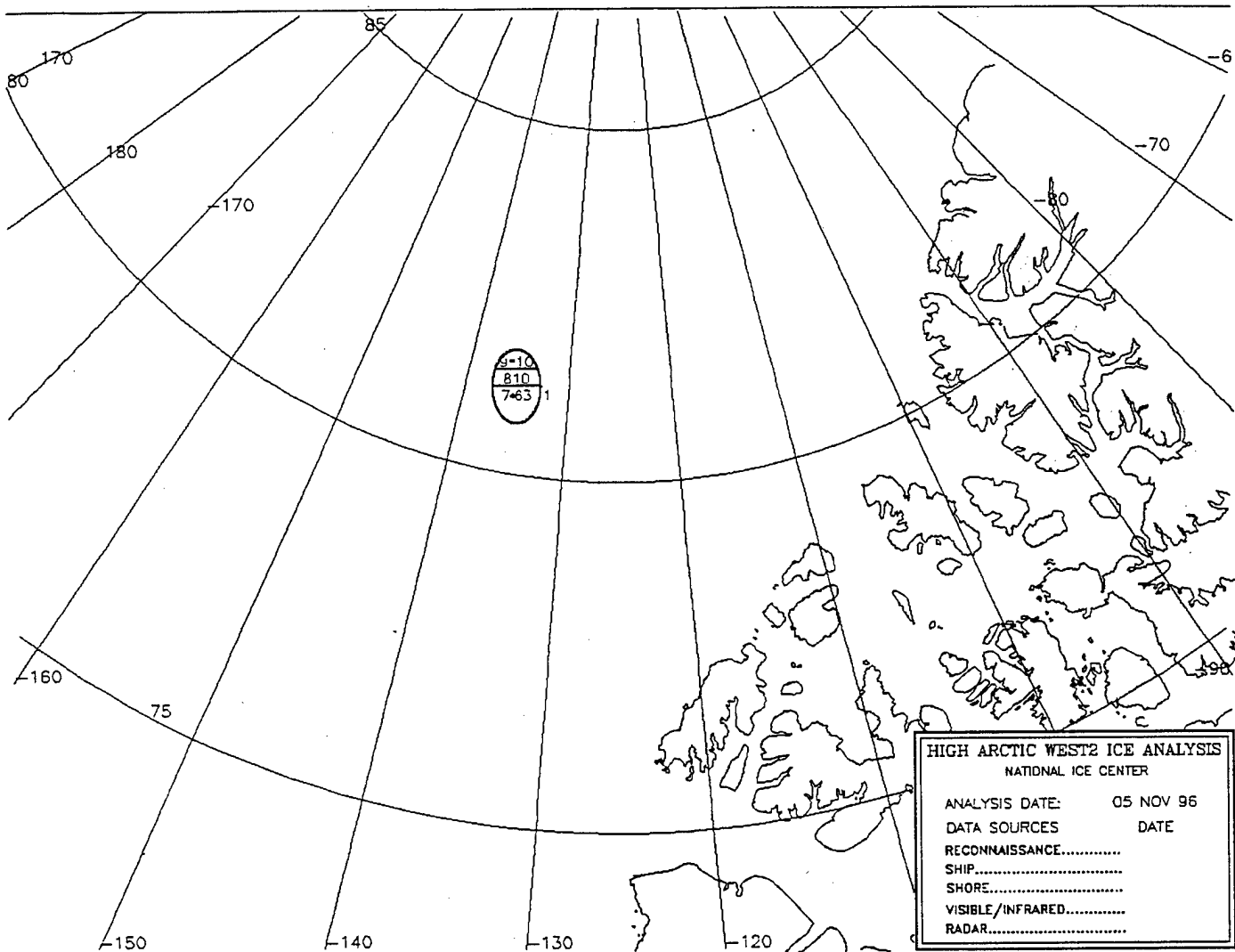
RADAR.....

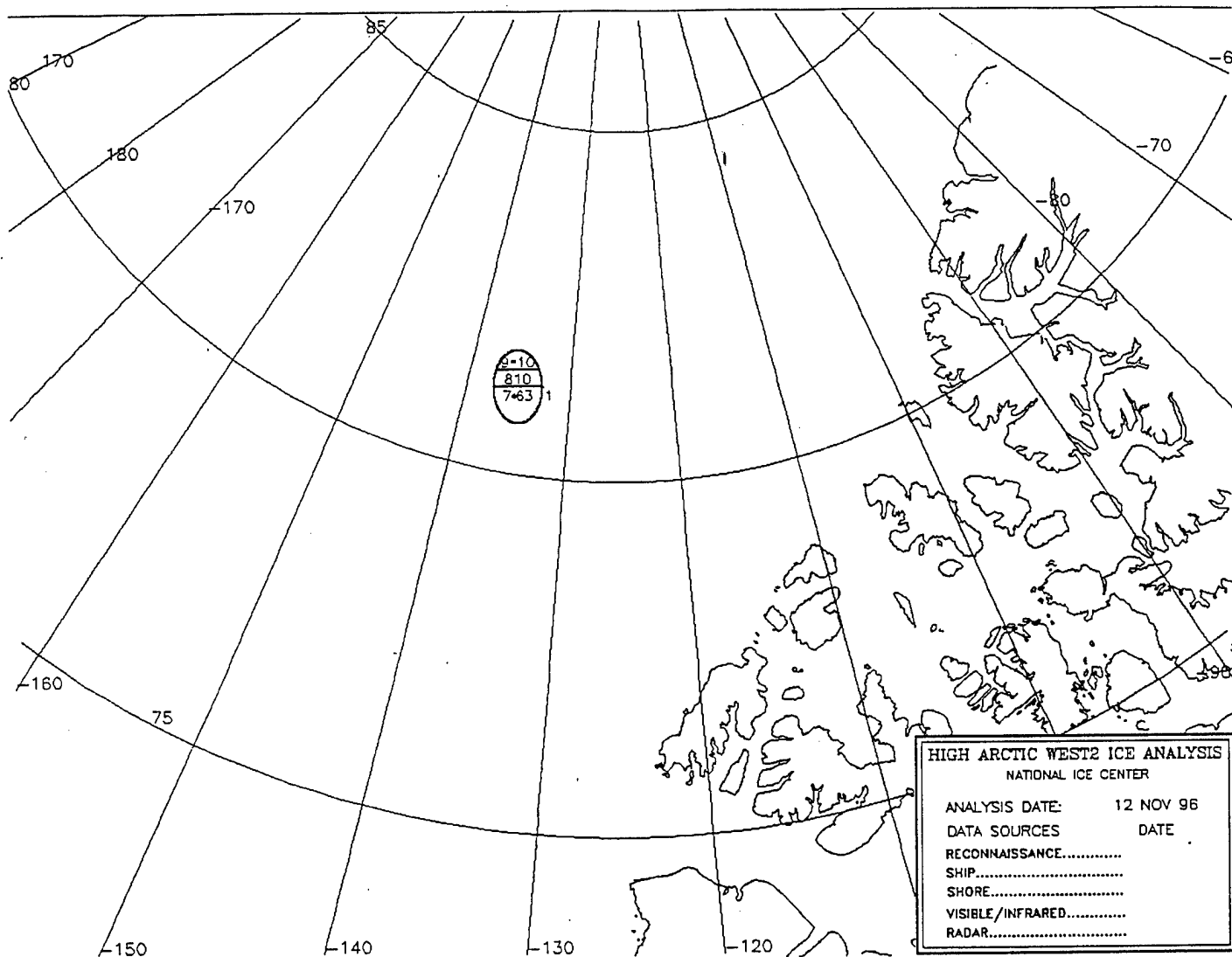


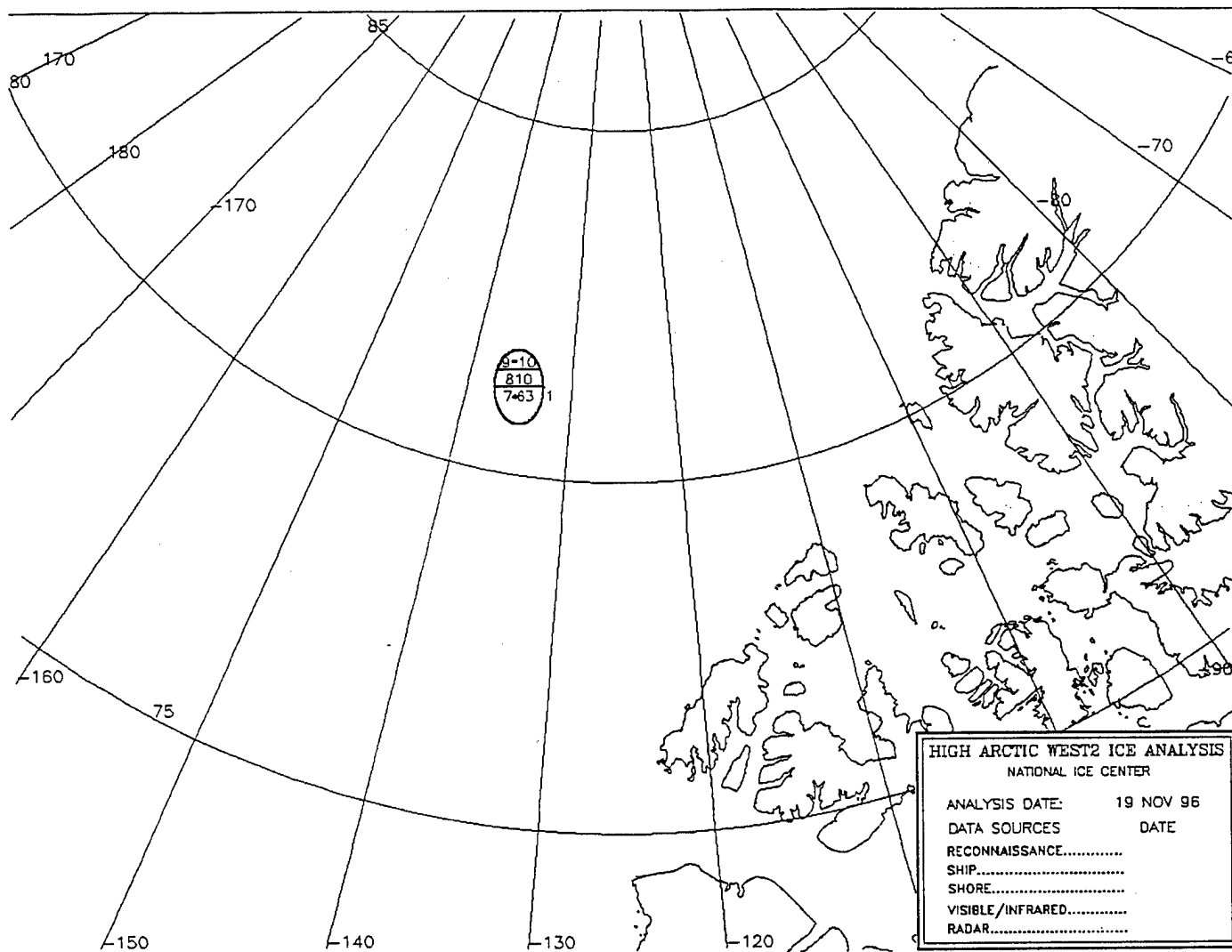
HIGH ARCTIC WEST2 ICE ANALYSIS	
NATIONAL ICE CENTER	
ANALYSIS DATE:	22 OCT 96
DATA SOURCES	DATE
RECONNAISSANCE.....	
SHIP.....	
SHORE.....	
VISIBLE/INFRARED.....	
RADAR.....	

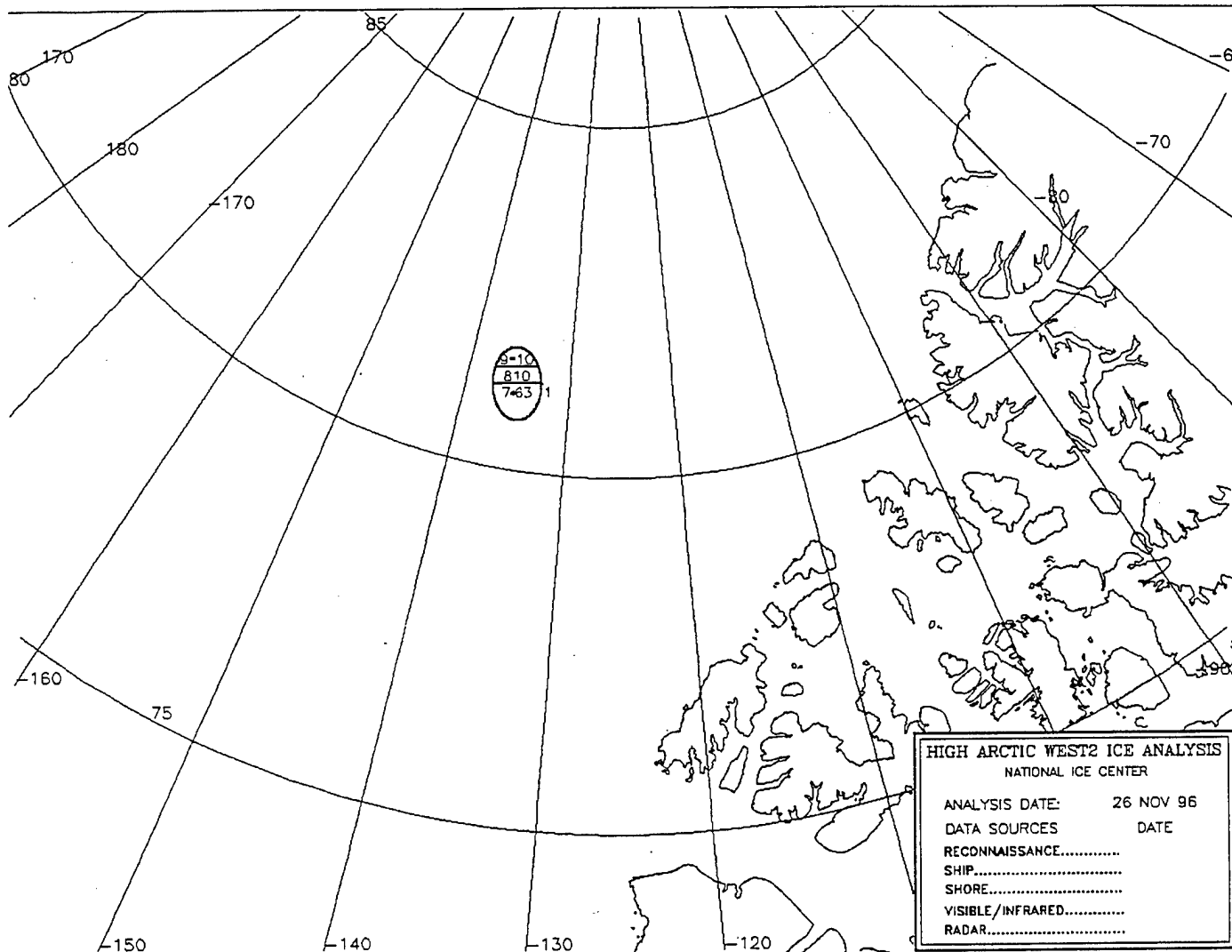


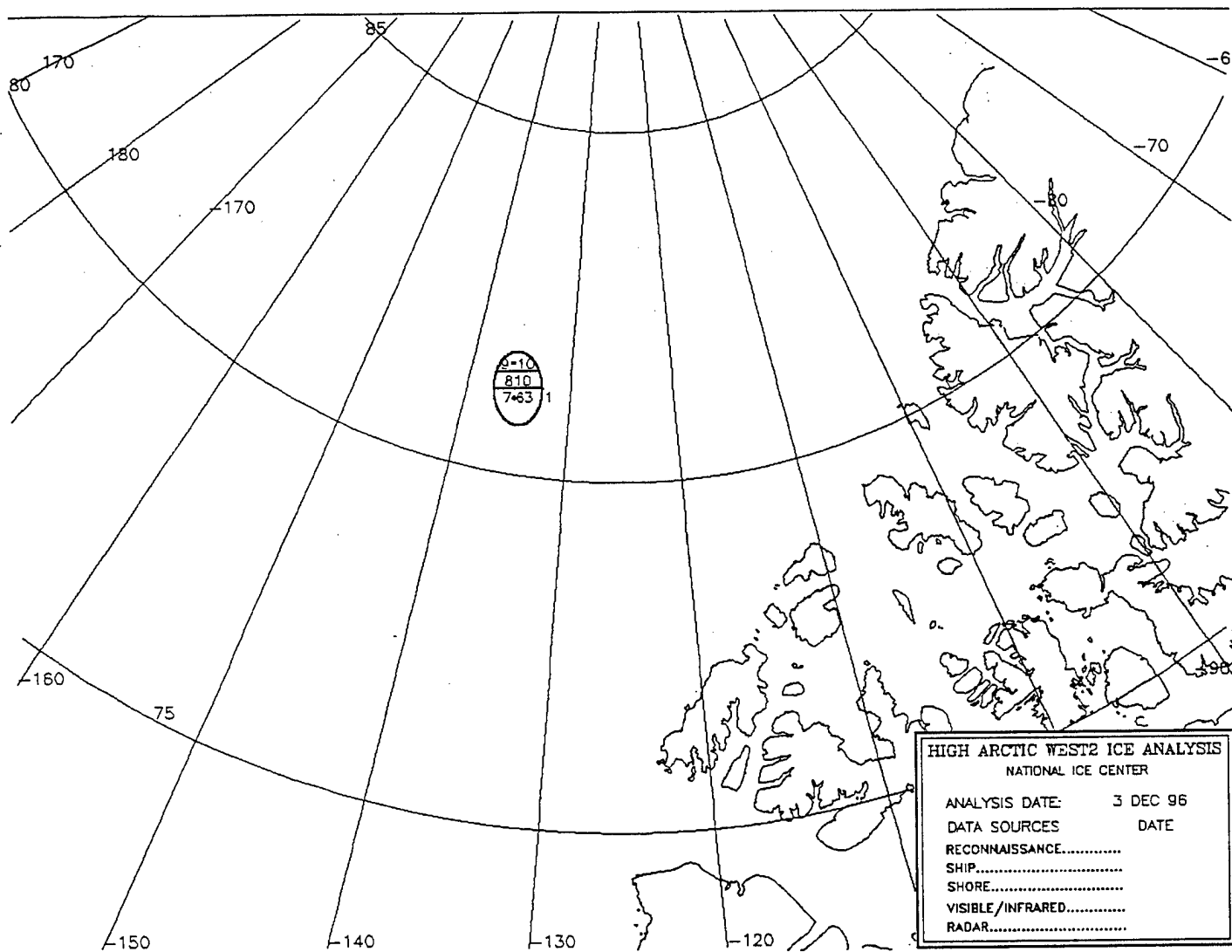
HIGH ARCTIC WEST2 ICE ANALYSIS	
NATIONAL ICE CENTER	
ANALYSIS DATE:	29 OCT 96
DATA SOURCES	DATE
RECONNAISSANCE.....	
SHIP.....	
SHORE.....	
VISIBLE/INFRARED.....	
RADAR.....	

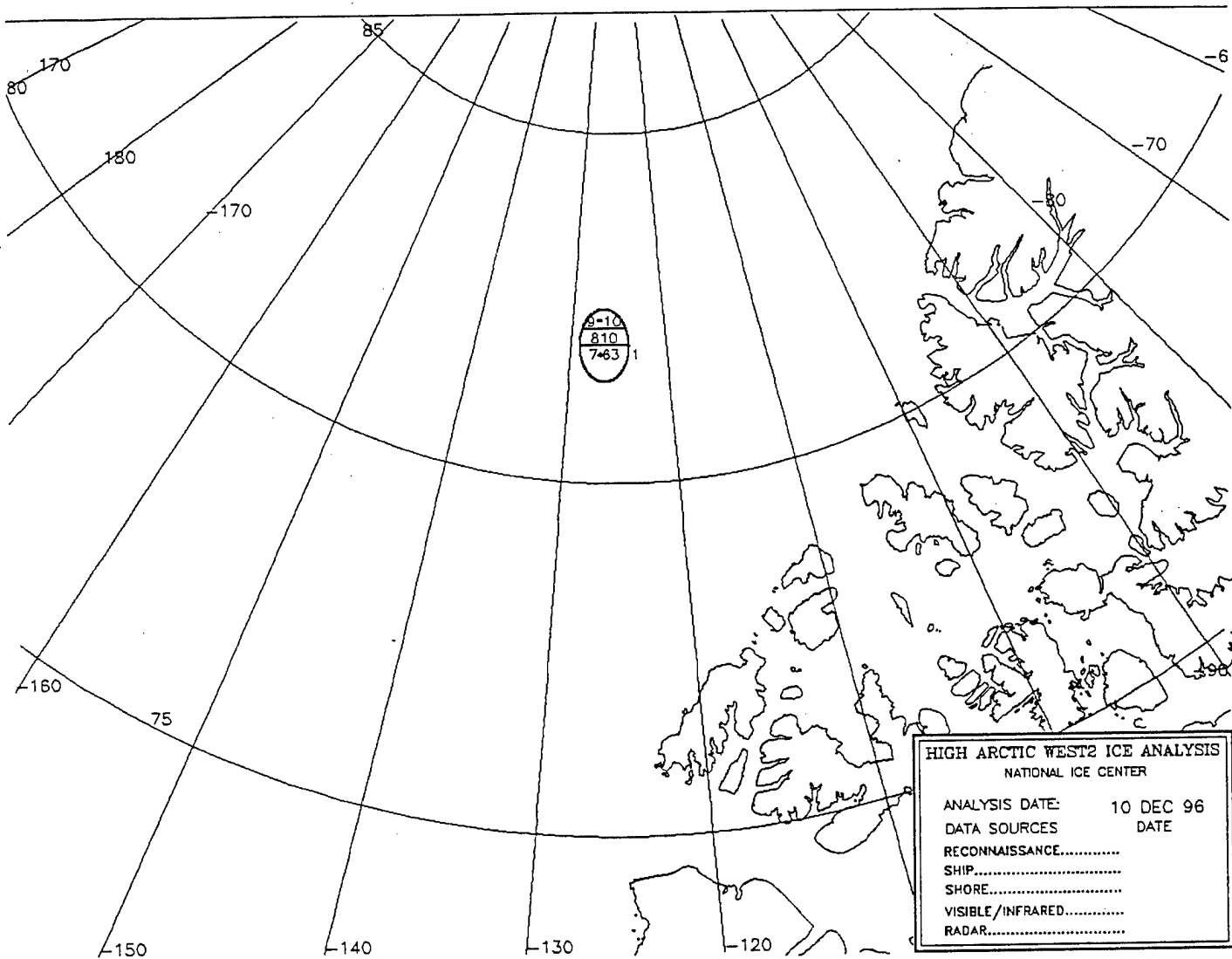


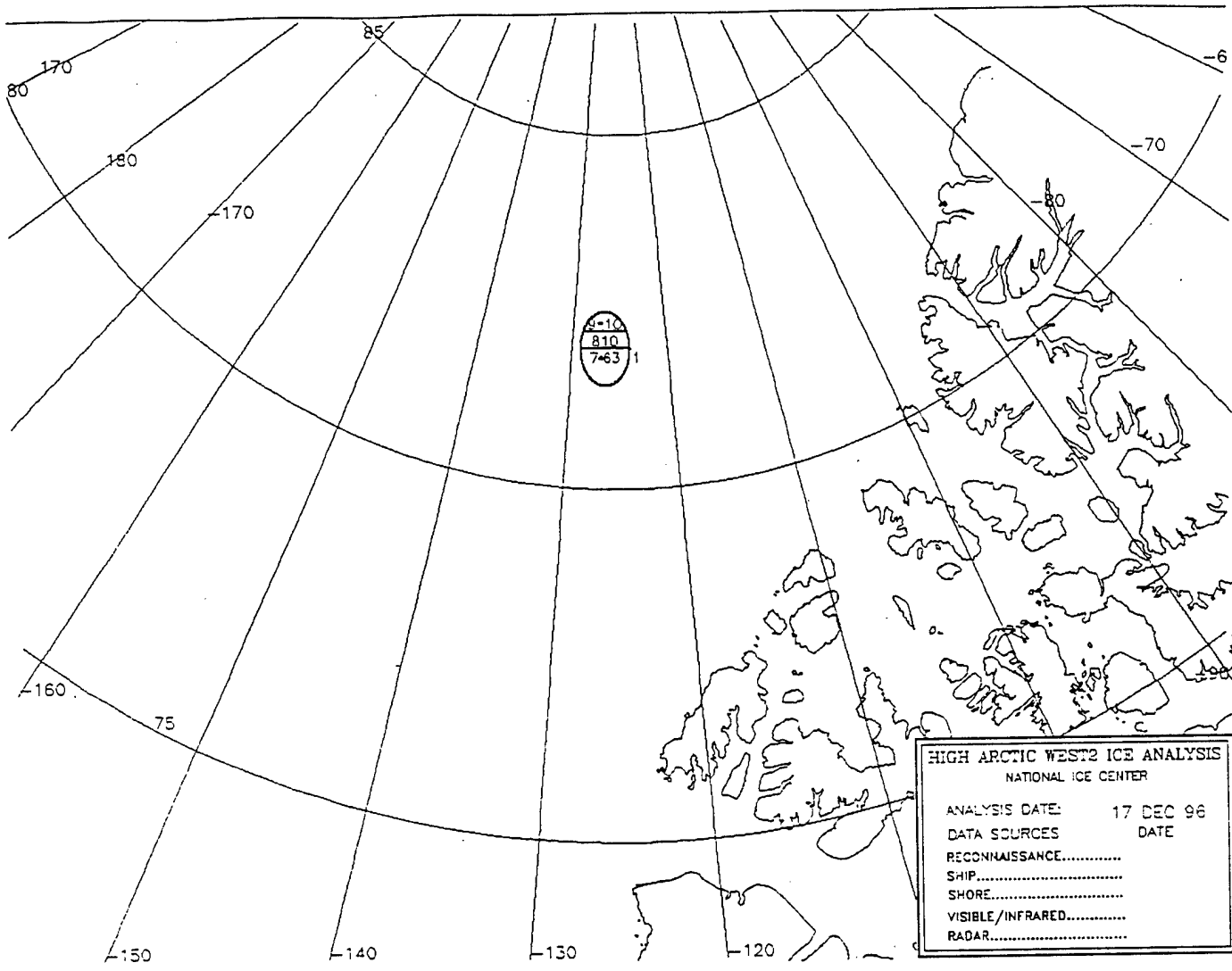


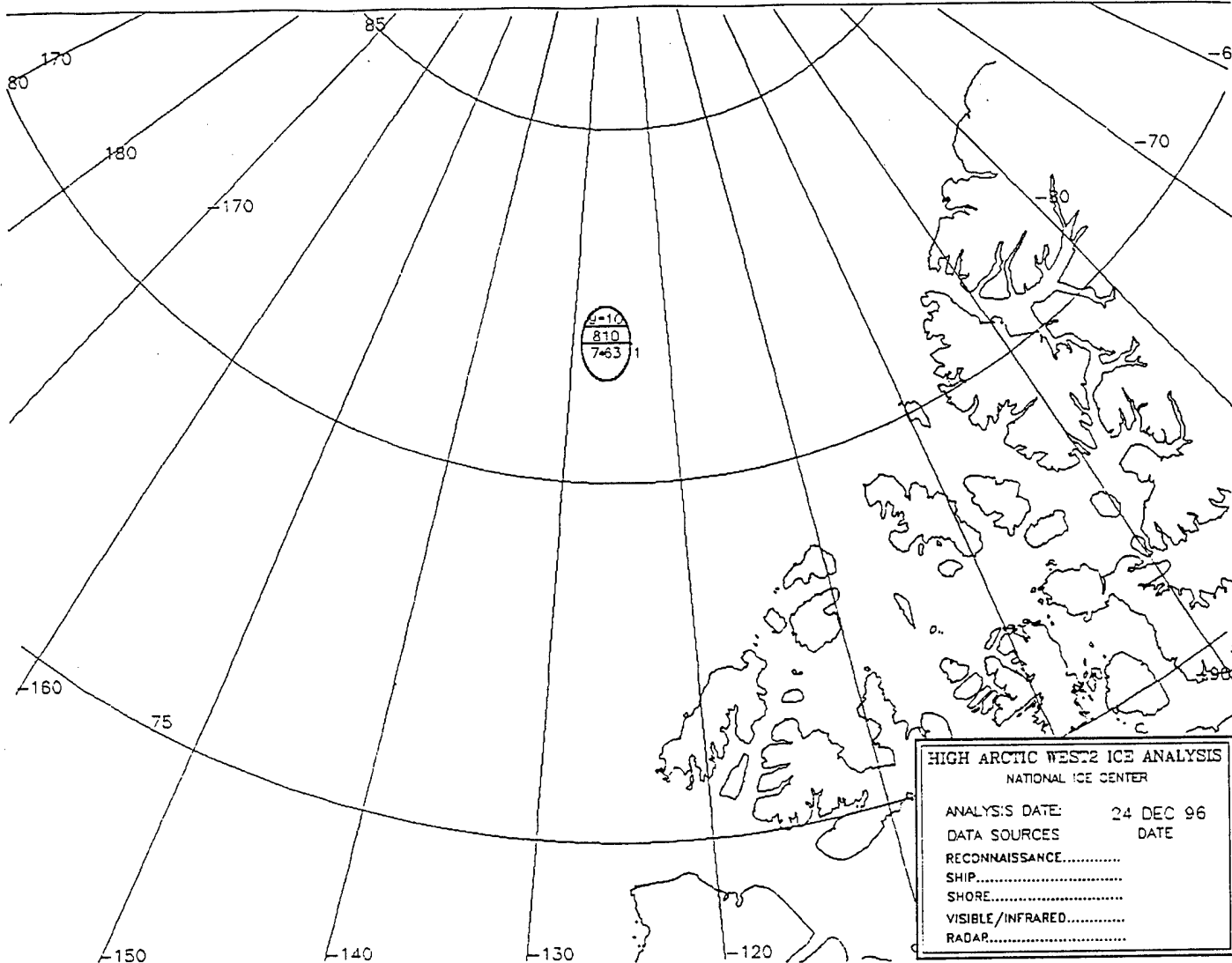


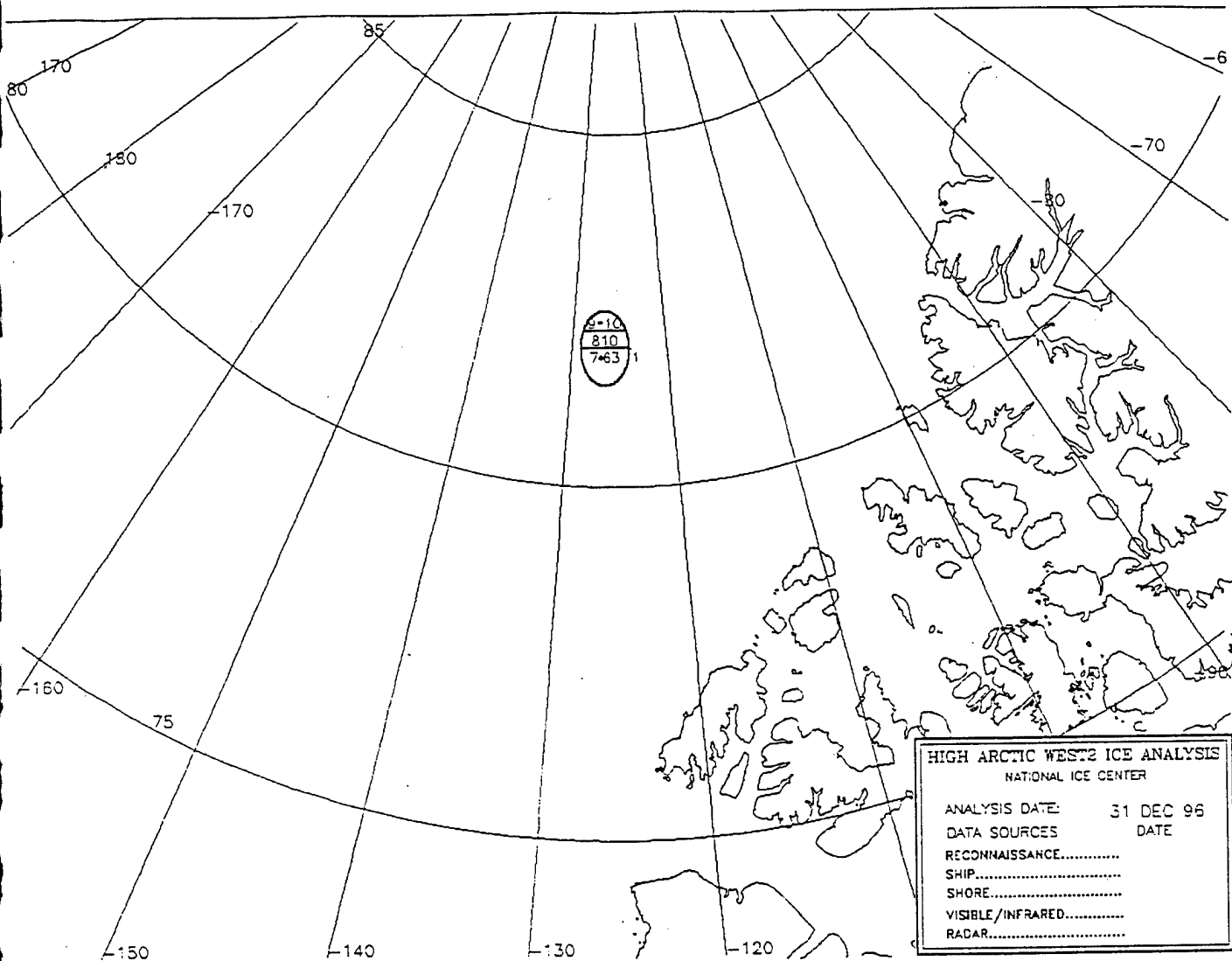












55

SEA OF JAPAN ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 05 NOV 96

DATA SOURCES DATE

RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED.....

RADAR.....

8-10
63
31

3-5
04
31

SEA ICE FREE

45

40

130

140

SEA OF JAPAN ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 12 NOV 96

DATA SOURCES DATE

RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 12 NOV 96

RADAR.....

55

SEA ICE FREE

50

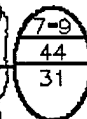
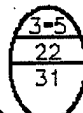
SEA ICE FREE

45

40

130

140



SEA OF JAPAN ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 19 NOV 96

DATA SOURCES DATE

RECONNAISSANCE.....

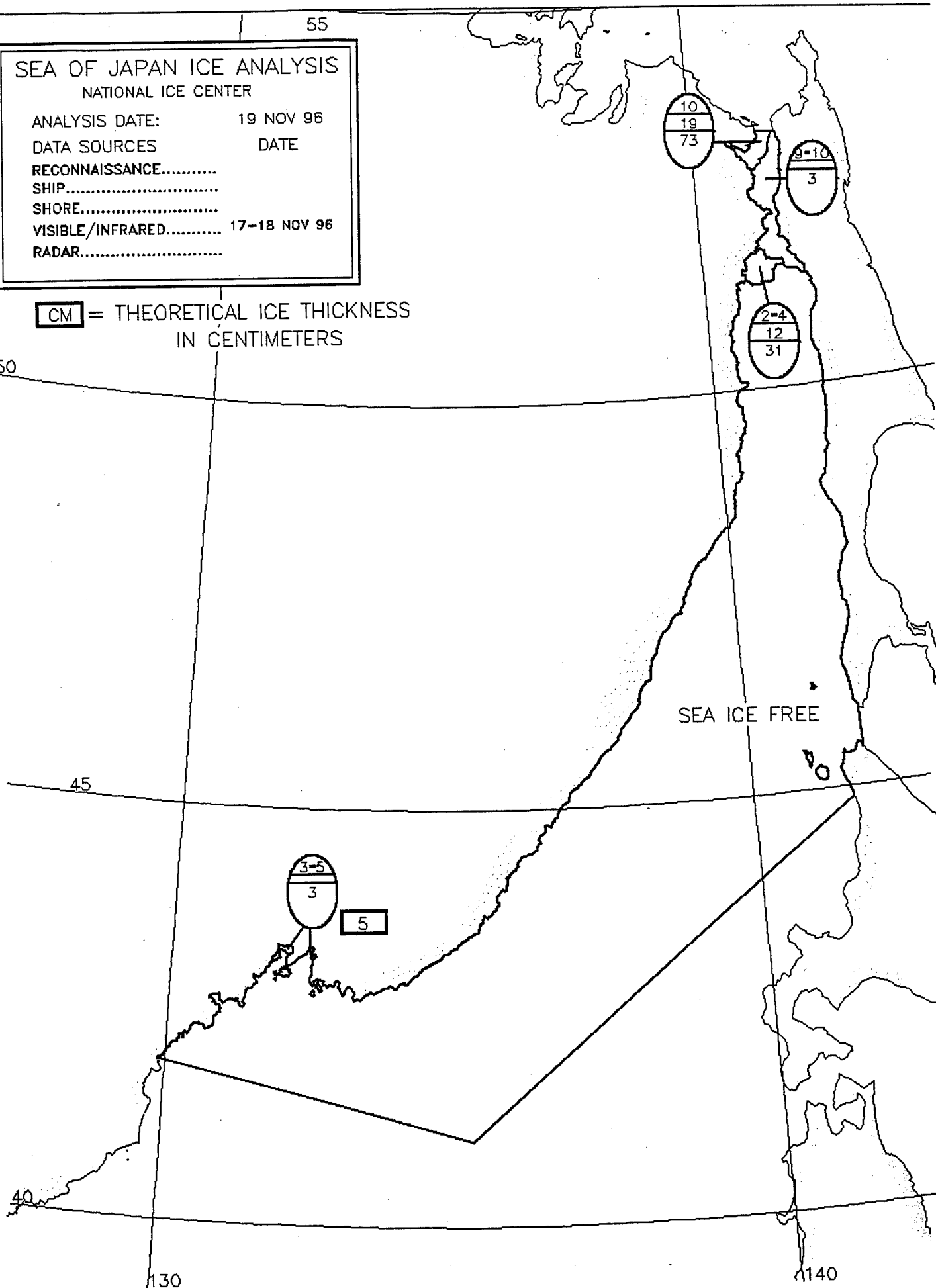
SHIP.....

SHORE.....

VISIBLE/INFRARED..... 17-18 NOV 96

RADAR.....

CM = THEORETICAL ICE THICKNESS
IN CENTIMETERS



55

SEA OF JAPAN ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 26 NOV 96

DATA SOURCES DATE

RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 26 NOV 96

RADAR.....

CM = THEORETICAL ICE THICKNESS
IN CENTIMETERS

50

A = $\frac{9-10}{90}$
31

B = $\frac{10}{19}$
73

C = $\frac{10}{91}$
31

D = $\frac{7-9}{53}$
31

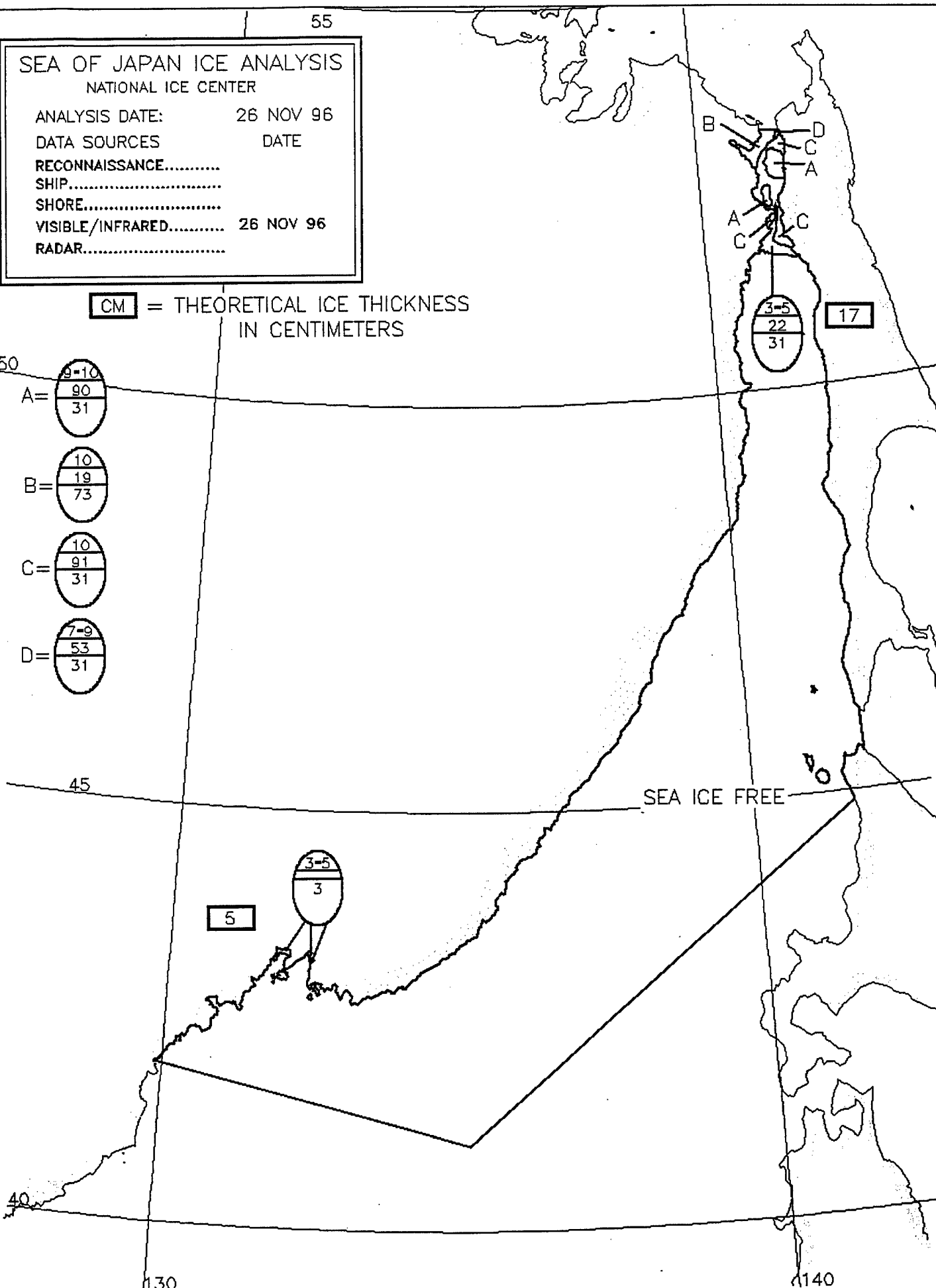
45

SEA ICE FREE

40

130

140



SEA OF JAPAN ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 3 DEC 96

DATA SOURCES DATE

RECONNAISSANCE.....

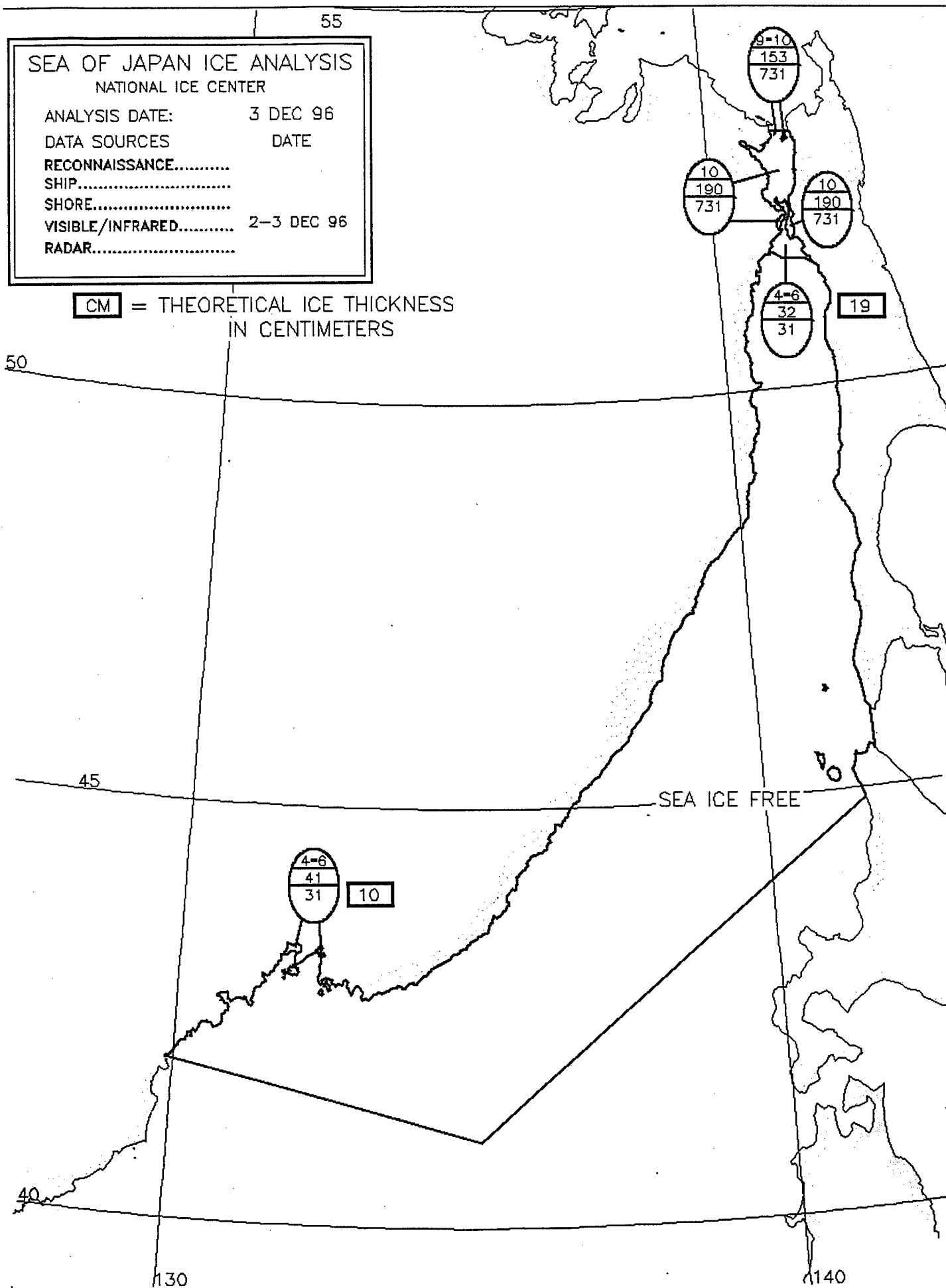
SHIP.....

SHORE.....

VISIBLE/INFRARED..... 2-3 DEC 96

RADAR.....

CM = THEORETICAL ICE THICKNESS
IN CENTIMETERS



SEA OF JAPAN ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 10 DEC 96

DATA SOURCES DATE

RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 07 DEC 96

RADAR.....

A= $\frac{4-6}{041}$
731

CM = THEORETICAL ICE THICKNESS
IN CENTIMETERS

50

45

$\frac{5-7}{51}$
31

17

SEA ICE FREE

40

130

140

SEA ICE FREE

26

$\frac{10}{19}$
73
8

$\frac{10}{19}$
73
8

$\frac{4-6}{041}$
731

55

SEA OF JAPAN ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 17 DEC 96

DATA SOURCES DATE

RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 13 DEC 96

RADAR.....

CM = THEORETICAL ICE THICKNESS
IN CENTIMETERS

50

A=

5-7
33
31
~10

B=

7-9
241
731
~10

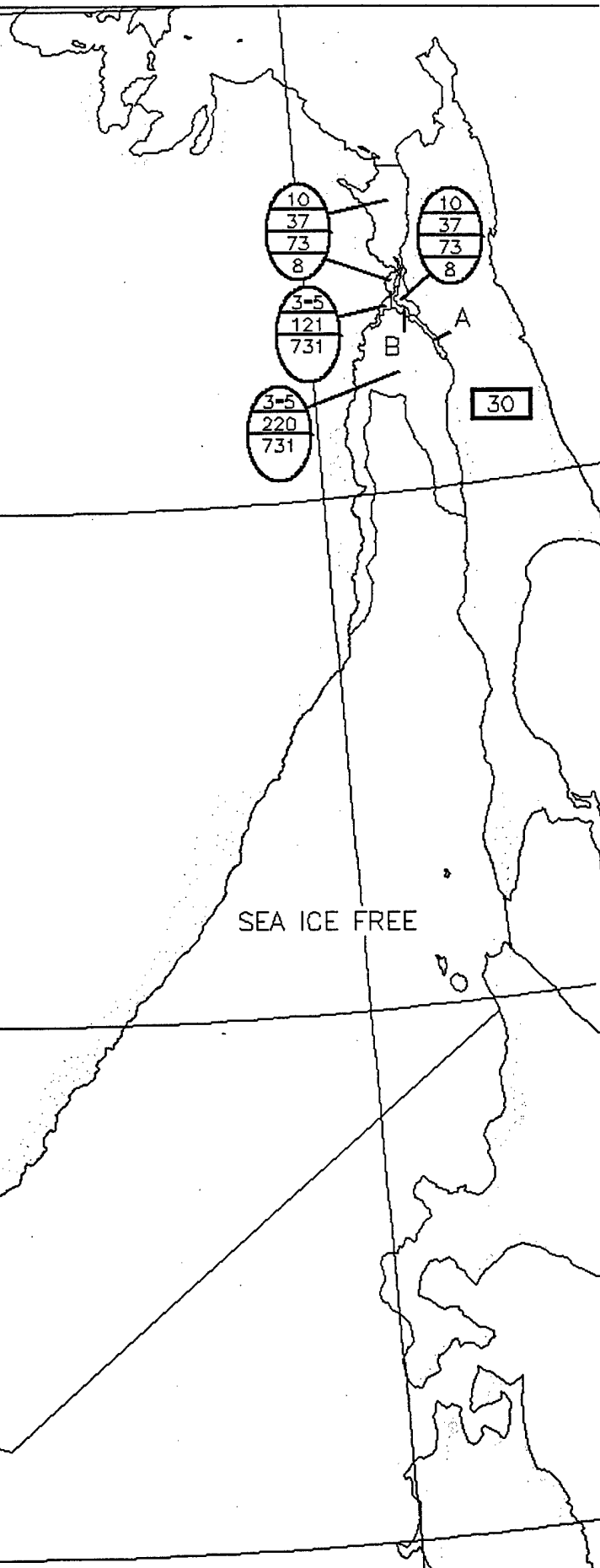
45

SEA ICE FREE

40

130

140



55

SEA OF JAPAN ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 24 DEC 96

DATA SOURCES DATE

RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED.....22 and 23 DEC 96

RADAR.....

50

A=

9-10
252
731

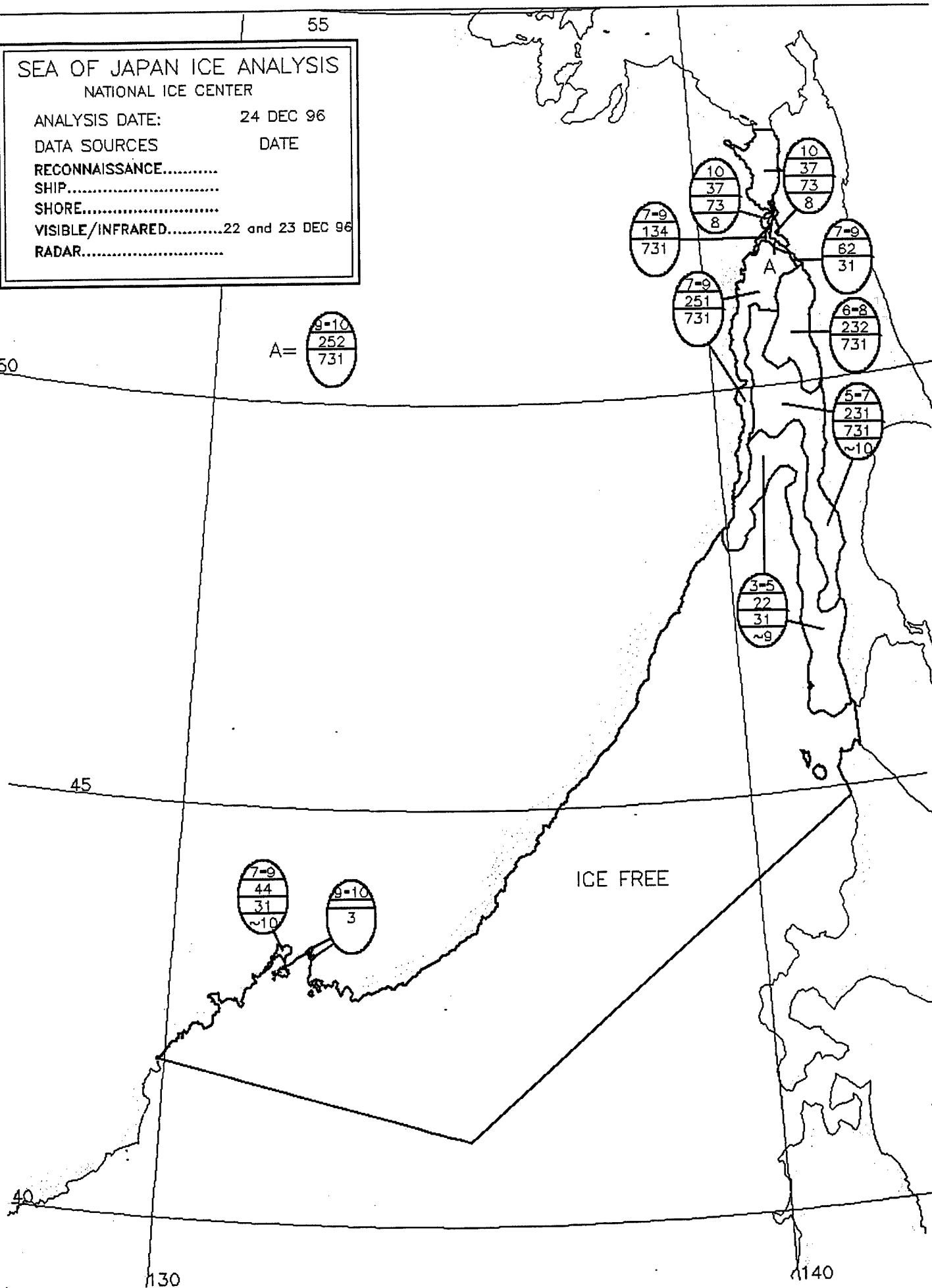
45

ICE FREE

40

130

140



55

SEA OF JAPAN ICE ANALYSIS

NATIONAL ICE CENTER

ANALYSIS DATE: 31 DEC 96

DATA SOURCES DATE

RECONNAISSANCE.....

SHIP.....

SHORE.....

VISIBLE/INFRARED..... 28-30 DEC

RADAR.....

CM = THEORETICAL ICE THICKNESS
IN CENTIMETERS

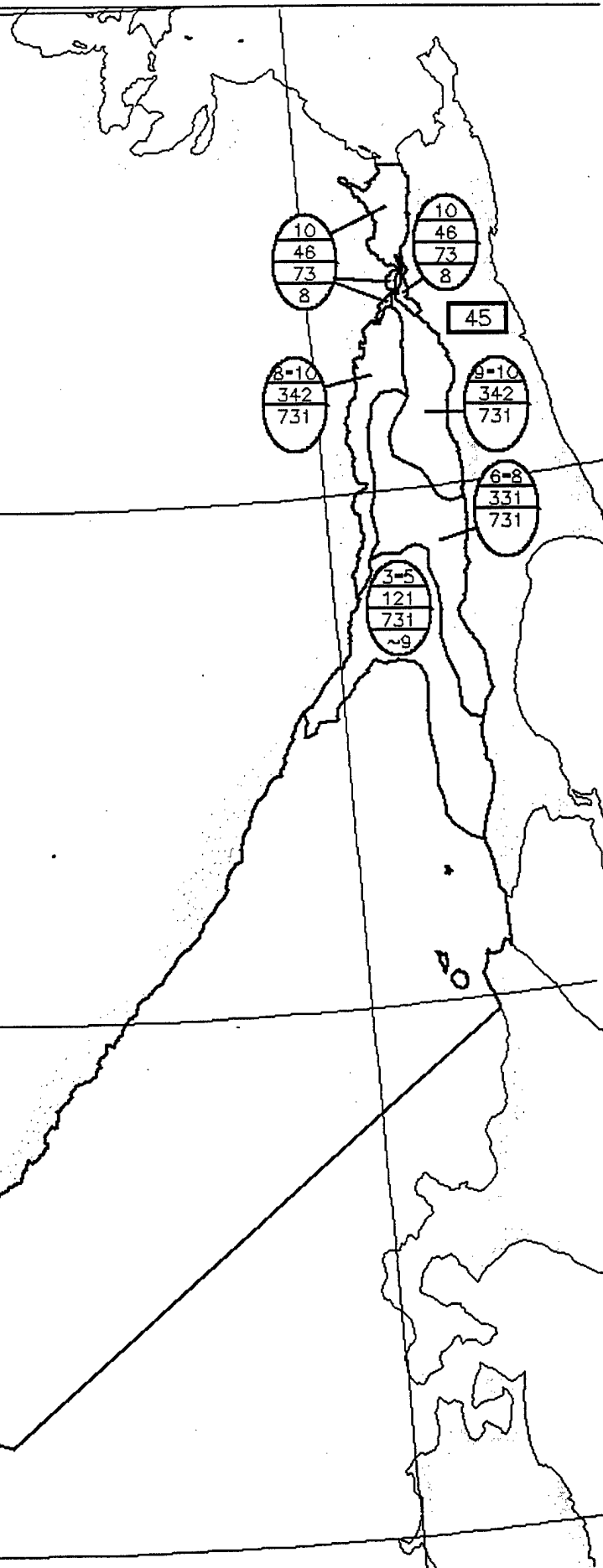
50

45

40

130

140



From	To	Sensor Platform	Sensor and Type	Spectral Region	Resolution	Coverage
01-96	12-96	DMSP F-10, 11, 12, 13	<u>OLS Fine:</u> VIS IR <u>SSM/I</u>	0.4 to 1.1 μm 10.2 to 12.8 μm 19.35 and 37GHz	0.55 km 25 km	3,012km 3,012km
01-96	12-96	NOAA 12, 14	<u>AVHRR:</u> HRPT/LAC VIS NIR IR	0.58 to 0.68 μm 0.72 to 1.10 μm 3.55 to 3.93 μm	1.1km at nadir; 2.5km at swath edge	4,000km
01-96	12-96	RADARSAT	<u>AMI</u> SAR	C- Band (5.3 Ghz)	100km	500km

TABLE 1. 1996 Arctic Satellite Data Sources

Abbreviations and Acronyms:

AMI- Active Microwave Sensor
 AVHRR- Advanced Very High Resolution Radiometer
 cm- centimeter
 ERS- Earth Remote Sensing Satellite
 GHz- GigaHertz
 HRPT- High Resolution Picture transmission
 IR- Infrared
 km- kilometer
 LAC- Local Area Coverage
 NIR- Near Infrared
 OLS- Operational Linescan System
 RADARSAT- Radar Satellite
 SAR- Synthetic Aperture Radar
 SSM/I- Special Sensor Microwave Imager
 μm - micrometer
 VIS- Visible
 RADARSAT- Radar Satellite
 SAR- Synthetic Aperture Radar

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